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THE
AMERICAN
AGRICULTURIST.

FOR THE
Farm, Garden, and Household.

"Agriculture is the most Healthful, the most Useful, the most Noble Employment of Man."—WASHINGTON.

VOLUME TWENTY-SEVEN—FOR THE YEAR 1868.

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THE ARTIST'S PETS.—FROM A PAINTING BY SIR EDWIN LANDESER.—Drawn and Engraved for the American Agriculturist.

This successful representation on wood of one of Landseer's famous pictures, will give pleasure to many of our readers. Even those who constitutionally hate dogs, will admire the faithful portrayal of the animals. Few dispute with Landseer the palm, which all England awards to him, as the first living animal painter. We have in the picture the artist's table, with pencils and crayons, stump, and bit of bread for erasers, (which last has attracted that frequent denizen of artists' studios, a mouse,) the silken-haired poodle, and the gigantic mastiff. Aside from the beauty of the picture, and its interest

as exhibiting two of this artist's own dogs—it is instructive, as showing also to what an astonishing degree a natural species of animals may vary under the influence of food and surroundings. In horses we see a great variety in a single species, varying in size from the great draught horses of 1,600 pounds weight to ponies which a man can lift. The varieties of neat cattle extend from the ponderous Short-horns to the little Brittany and Kerrys of one-third their weight. In dogs, however, there are still more wonderful differences. The smooth skinned monster, standing perhaps 34 inches high to the shoulder,

and weighing 150 pounds, and his little companion, so covered with its silky fleece as to completely hide its slender form, and weighing 5 or 6 pounds at most, are fitting examples of the extent to which the physical characters of animals are under the control of man, for it is only among such as are subjected to the influences of civilization that these astonishing variations occur. While a few, like the dog, adapt themselves to changes of climate and food, and become domesticated, others can only be preserved alive by imitating the conditions to which they are accustomed in their native country.

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Thoughts of the New Year are hopeful and joyous, as, heeding the lessons of the past, we press forward in the busy present, eager to try what the hidden future has in store. May it be a happy and prosperous one to all our readers, many of whom we greet for the first time. We might dwell on the events of the year that is past with mingled emotions of pleasure and pain, for it has been an eventful one, and joy and sorrow have mingled in the experiences of our readers and of ourselves; profit and loss have filled their respective columns on the ledger, as deluge or drouth have maintained a parallel account on the face of the country. We turn rather to the duties, opportunities, and labors of the present.

The winter gives us long evenings, and many quiet hours for reading and thought. Thinking farmers are students for whom school always keeps; their education is never complete; they are never too old to learn. There is many a man who ridicules book farming, and never reads an agricultural paper, who is thoughtful in his way, and a very good farmer. He is wide awake when facts are discussed which touch his business; if his neighbor raises bigger crops than he can, he finds out how it is done; if he has better seed, he manages to get some; if he hears of an improved implement, he is pretty sure to find out all he can about it. This is like taking a very poor agricultural paper, and only reading one number a year, or trusting to your representative to send you an Agricultural Report.

A good agricultural paper enables a farmer to talk with a score of neighbors at once about their crops and stock, to learn the ways of doing things which successful farmers pursue in all parts of the world, to learn about new implements, new stock, new seeds, etc., much better than in whole evenings spent with a neighbor who has been to the State fair. If other similar journals increase their subscription lists as rapidly as the *Agriculturist* does, and we hope they do, we must think that those smart, successful farmers who are averse to reading, are fast going out of fashion.

Farmers' Clubs and Libraries ought to be encouraged in every way. Where none exist, they should be organized at once, if there are no more than half a dozen farmers who would agree to attend.

Business.—Farmers are not "business men" in the estimation of the world. They ought to be. A merchant's business is estimated by the amount of his transactions rather than by his profits. The farmer's cash account may be small, but if all his "transactions" could be put down in dollars and cents, he would be surprised at the amount of business he is doing every year. The present is the time to plan and lay out the business of the coming season, and of the whole year indeed. Let us never work without plan, remembering that the more thoroughly labor, time, wear and tear of tools, and stock is estimated in dollars and cents, and the more thoroughly a business year is taken of everything, the more certain will be the profits and ultimate success, if we work on business principles.

Hints About Work.

Building.—Timber may be gotten out, frames cut and fitted, for new buildings, and alterations of the interior of houses or other structures may go on as well in winter as at any time, labor being cheaper, and contractors desirous of having work for the men.

Frost and Snow.—Look to the protection of water pipes, the root cellar, or roots wherever stored, against frost. Snow affords excellent defence against hard freezing. Never delay path-making after the snowing is fairly over. In case of a very heavy fall of snow, endangering rail roads, etc., clear it off immediately, lest, rain falling, the weight be greatly increased, and serious damage occur.

Icy Paths are dangerous to both men and animals. Coal ashes are usually the most convenient article with which to cover icy spots, but they are

dirty about the house. Sand is better, sawdust still more cleanly, and salt seldom advisable.

Horses.—Look frequently to the caulks, and never let them go smooth-shod, the strains and sprains occasioned by going over slippery ground being the frequent causes of spavins, splints, and other lamenesses. Horses not exposed to draughts of air, do not need blanketing in the stable, except when they are warm from recent exercise. Unblanketed, they will eat a little more, but have better health.

Cows.—Dry cows coming in in the spring, need just as good feed and care as if in full milk, but the food need not be so fattening. Roots are a very useful addition to their feed, and they should have the liberty of a sunny yard several hours a day.

Milk cows require, of course, food and treatment calculated to stimulate milk production.

Young Cattle.—Spring calves are making their most rapid growth just when cold weather comes on. They should receive very much the treatment of older stock, and not be wintered in the yards and open sheds. They will eat less, and grow faster for warm stabling; besides, their manure will be worth more. Their growth will surprise one accustomed to winter such stock in the old way.

Bees.—Oil-cake will be extensively substituted for corn meal as feed for fattening stock this winter. Variety is desirable in feeding, salt is essential, regular watering indispensable, and the highest degree of comfort most profitable. Great quiet and warm stables, with good ventilation, and frequent and regular feeding, are the circumstances most favorable to rapid healthy fattening.

Sheep.—Stock sheep ought to have the range of good-sized yards, and the shelter of warm sheds, to which they have free access during the day, and in which they are confined at night. Ewes will do much better for a little grain daily, and their lambs will be stronger. Fattening sheep should be pushed forward during this month to be ready for a rise in the market. Feed meal with care that all get their allowance; those that get too much may suffer for it.

Swine.—Give brood sows good plain feed, not too fattening. If they have made their growth, (and old sows are the best breeders,) they do best on really poor fare. They will even winter well on clover hay, with a few rubbins now and then, if they have good warm pens and plenty of litter.

Fowls should receive especial care towards the latter part of the month. With extra feeding, occasional feeds of chopped meat, or scrap-cake, they will soon lay freely, and if one has warm quarters for young chickens, (a hot-bed frame, with the sashes, of course, is excellent, and so is a cold grapey) it may be well to set hens as early as the last of this month. By employing cocks of the large breeds, Cochins, Bantams, or Dorkings, large broilers may be ready for market by the time asparagus is fit to eat. It is not worth while, in raising chickens for stock or for autumn and winter marketing, to have them hatch before the middle of April.

Manures.—We shall want manure as soon as the spring opens, and no one can have too much, if properly applied. See "Walks and Talks" on this subject, bearing in mind, however, that as we usually feed the various classes of domestic animals, and as they are likely to be fed from one end of the country to the other, horse manure is much more heating than that of neat stock, that the manure of young stock and milch cows is the poorest, that of horses and fattening cattle the next best, that of swine next, and by far richer, and that of poultry the richest of all, not excepting that of man. Beef scraps, fresh bones pounded, desiccated flesh, and similar things, make the manure of hogs and poultry very rich. The dung of birds is superior to all other kinds that are used on the farm, chiefly because their urine is solid, and is mingled with the discharge from the bowels. Its color is usually white. Save every particle of any kind that can be gathered. Make good broad heaps, and work them over, that they shall not heat, and, if possible, work much in very liberally. Keep manure under cover.

Draining may be done, should the frost leave the ground, or be found to be not very deep. See article on draining in winter, page 16, of this number.

Fencing Material should be got out, and hauled to the lines where it is to be used, for fences are usually best built when it is very heavy wheeling.

Fire-Wood.—"In peace prepare for war." Though the whole year is before us, trust that no future time will be better to cut fire-wood than the present—that is, the winter. Have cord wood piled to shed water to the east.

Clearing Land.—This is a very good season in which to blast rocks, cut alders and willows, and often those tussocks of coarse grass, called "bogs." Ditches may be dug in swamps, and such work done.

Thaws.—Those of the Northern States where the land is often covered with great masses of snow, are liable to thaws, coming in consequence of heavy and warm rains. See that no damage occurs from a great rush of water over the frozen surface, or from its being dammed up behind drifts, and entering cellar walls; and stand ready to take advantage of even a temporary breaking up.

Ice-Houses.—It rarely happens that ice does not form, during January, sufficiently to pack. Cut as soon as six inches of clear ice can be got. Ice-houses fail to keep ice for one of three reasons: either there is not perfect drainage, in which case the ice goes very rapidly; or there is access of air to the ice through the foundation or under the sills; or the ice was not well packed. There should be a great abundance of straw or chaff on the floor, and the ice on all sides should be packed with sawdust, chaff, or straw, while plenty of straw should be used to cover the surface.

Work in the Horticultural Department.

It is well that out-of-door work sometimes ceases, or at least becomes so little pressing, that we have time to plan and think. While the general aspect of these notes is such as might lead one to suppose that they were reprinted from year to year, there is really no more pains-taking work put into the paper than just here. Certain things, it is true, have to be repeated, and it is not easy to give directions to transplant cabbages in any great variety of language. In making up these notes we are obliged to have several distinct classes of readers in mind: those who cultivate entirely for profit, and those who grow plants for the love of it, and without regard to gain; those who are familiar with the ordinary operations of horticulture and only need to be reminded of the season in which to do them, and those who essay the simplest operation for the first time. Besides the routine directions it will be found that we each month incorporate much that is new under the different divisions, and answer in general terms many letters of inquiry. Horticulturists have always been in advance of farmers in availing themselves of the recorded experience of others, and we now have not only general treatises, but many excellent works upon special subjects, in which the various processes are treated more in detail than they can be by general writers. The past year has brought out works of great value in all departments of horticulture, and no one whose operations are upon any other than a very small scale can afford to be ignorant of the current literature of his favorite branch.

Orchard and Nursery.

Order Trees early; if one lives near a nursery it will sometimes pay him to give an extra price for the privilege of digging his own trees.

Rabbits are troublesome, especially when the snow is on the ground. Among the various preventives blood has been found the most easy of application and as efficacious as any. One sprinkling will last all winter. If blood cannot be obtained readily, rub the trunks of the trees with liver or bloody meat, but this is more troublesome.

Mice work under cover; keep all rubbish away from the trees, and tramp down light snows. When there are not many trees it will pay to clasp the base of the trunks with a girdle of old tin, or sheet iron.

The Tent Caterpillar is one of the most destructive insects in the orchard, and one of the most readily controlled. The eggs may now be seen girded on as a band around the twigs near their ends. Get them off at any expense of time and labor.

Cions.—The sooner these are cut, the better, as experience has shown that a much larger proportion of early cut grafts will live than those taken after they have been exposed to the severity of the winter; this is especially the case when the autumn has been unfavorable to the ripening of the wood. Label correctly, and pack in boxes of fresh sawdust.

Root Grafting may be done; graft at the "collar" and never on tips of roots. Waxed cotton twine is the most convenient tying material.

Map the Orchard.—We often advise this, and cannot do so too frequently; the best label will get lost or become obliterated in time, and memory is not to be trusted. If a place is to be sold, a named orchard will add much to its value.

Nursery Stock may be headed back and shaped any time during winter when the weather is mild.

Fruit Garden.

Whoever contents himself with a single variety of strawberry, currant, or other fruit, gets only half the satisfaction his garden is capable of affording, or, if he cultivates for market, only a portion of the profit he might otherwise receive.

With proper forethought in selecting early and late varieties to supplement the main crops at both ends, the season of most fruits may be much extended. Now is the time to think up such matters, and to arrange for a succession of fresh fruit, from the time the earliest strawberry ripens, until the last winter pear and long-keeping grape is gone.

At the South, preparing the soil and even planting may go on, but in our colder climate but little can be done save preventing injury to trees by animals and horsemen, and in mild spells to

Prune such grape vines and currant bushes as have been neglected until now.

General Work, such as protecting trees, removing the eggs of insects, is hinted at under Orchard.

Kitchen Garden.

The amount of out-of-door work will be governed by the season and the locality; wherever anything can be done to facilitate next spring's operations it should be attended to while work is not pressing. At least the one important article of

Manure—the key to success—can be accumulated. There are but few crops that will not pay for liberal manuring, and where early hot-beds are to be started, the manure may be placed where it will be needed. The heaps should be so large that they will not become chilled through, and if fermentation goes on too actively they must be turned over.

Hot-bed Sashes and Frames are to be in readiness. The usual size of sashes is 6x3 feet. In small operations a frame of convenient size is placed on a thick bed of fermenting manure, but it is quite as well to excavate 2½ feet deep, and board it up with rough boards and place the heating material in this.

Straw Mats will be needed, and a good stock of them may be made in a short time, according to the directions given on page 22.

Cold Frames generally need more attention to keep them cold than to prevent injury from freezing. Cabbages, especially, should have air, except in very severe weather, and in a mild time the sashes may be entirely removed during the day.

Tools are to be overhauled and repaired, and those needed made or purchased. A home-made roller, marker, reel for a garden-line and the like, are great helps, even in a small garden.

At the South, in favorable localities, hot-beds may be started, and Lettuce, Radishes and Cabbages sown in them, and the half hardy vegetables, such as Beets, Carrots, Turnips, etc., sown in the open ground, and the early sorts of Potatoes planted.

Flower Garden and Lawn.

Evergreens are now appreciated, and the present is the season to discover where they may be introduced into the grounds to the best advantage.

Rhododendrons, Hollies, and other of the broad-leaved evergreens may be made to contribute largely to the cheerful winter aspect of the grounds, and some of them, such as the Kalmias and Rhododendrons, serve the double purpose of making them gay with their flowers in spring and summer.

Shrubs and Trees of all kinds must not be broken or bent out of shape by heavy loads of snow.

Hedges may have their winter pruning in mild weather and in southern localities.

Box Edgings may be laid, using rooted plants only.

Green and Hot-Houses.

An average temperature of 50° in the green-house, with a rise and fall of some 15° for the extremes of mid-day and night, will do for general collections.

Camellias and Azaleas now in bloom need liberal watering; those done flowering prune into shape.

Hyacinths and other bulbs may be brought into a warm place to keep up a bloom, and as soon as the flower fades, cut away the stalk.

Propagation of Verbenas, Heliotropes and other summer bedding stock, may be carried on.

Seeds of Pansies, Stocks, Petunias, etc., are to be sown to furnish plants for spring flowering.

Oranges and Lemons are to be kept in a cool part of the house and only sparingly watered.

Frozen Plants in dwellings are often killed by kindness. Thaw them always in a cool room.

Insects need to be kept under from the start. Tobacco smoke, and the use of the thumb and finger, are generally sufficient remedies in small collections.

Apiary in Jan.,—Prepared by M. Quinby.

There are some people who are totally indifferent to the comfort of stock of all kinds; others who give every care to provide comfortable shelter for their cattle, but nevertheless leave their bees exposed all winter. We judge this comes from ignorance of what to do rather than from willful neglect. If bees are allowed to remain on their summer stands, shelter from prevailing winds. Where few bees are kept, when swarms are hived, they should be placed in the lee of the buildings, or tight fences, or of an evergreen hedge. If in a Southern exposure, keep the sun off their hives, that the bees may not be too much excited by its deceptive warmth. It is better they should fly when the temperature in the shade tempts them out. In the common box hive, a three-quarter inch hole, one third of the height of the hive, from the top in front, if the combs run from front to rear, if not, at the side, is an advantage. If the entrance at the bottom is stopped by dead bees or snow, they have the upper hole free. Use this, and give themselves no concern about cleaning house in cold days, but fly in and out at this upper entrance. They enter at once in the cluster, for you can always see them clustered close to this entrance, and below it, except in extreme cold. This is preferable to having to crawl up a long cold side, and saves many lives. Covering hives with straw answers well. Further south, where the winters are open, and bees can fly occasionally this month and next, it may be as well to leave them out, but a decided advantage is found further north, by wintering in a dry cellar, or a properly constructed pit. A uniform and dry atmosphere, a few degrees above freezing, is the end desired for safety, and for economy of stores.

Although bees lose less in numbers when wintered in a cellar, they begin to breed earlier when left out, which makes the latter course preferable for latitudes not subject to extreme and long continued cold. As this paper is read from Canada to Florida, we can best serve the interests of its readers by advising them to experiment cautiously, and find out what is best for their locality, not incurring risk by putting all their eggs into one basket.

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ALL

READ THIS!

We are this year going to give, for the subscription money asked, a wonderful amount of good, reliable information, beautiful and instructive engravings, pleasant and useful reading not only for the Farm and Garden, but for the Household—Ladies and Children—so that the paper will be desirable for all classes, in Cities and Villages as well as in the country. (Mr. Judh has arrived home much improved in health and vigor, and will begin to aid us by next month, devoting his time and attention mainly to the *Agriculturist*. The business departments are now so fully manned by others, that he will have far more time to devote to the reading columns of the paper than has been the case for some years past.)

All the subscription money received, and considerable extra from advertising receipts, will be expended on the paper; our readers will get back more than they pay.

The subscription list is already so enormously large, and the expense of editing, engravings, type-setting, electrotyping, etc., is divided among so many, that we are able to give a great deal for the money. Every added subscriber merely requires printing paper, folding and mailing; so each addition benefits all others.

The larger the list of readers the more valuable the advertising space (which is kept limited to the last quarter of the paper). So after setting aside from the advertising receipts a portion towards getting up a good paper, another moderate portion for their own labor and profit, the Publishers devote the rest to paying those who use time and exertion in extending the subscription list, and this amounts to a very liberal sum. Experience has proved that the best way of paying canvassers is to offer premiums, open to all alike.—We select good articles, such as appear to be most generally wanted, and by buying them direct of the manufacturers, at first cost, and often by paying part in advertising, we are able to give much more liberal commissions for obtaining subscribers than we could give in money, while the articles furnished, all warranted *first-rate*, are worth to the recipients the regular market price, either for their own use, or for sale.

Many thousands of persons in all parts of the country have obtained from our office, needed or desirable articles, with little or no money expense; and many others have canvassed as a business, received the premiums, and sold them, thus realizing very handsome pay for their work. A good many persons have thus cleared \$3 to \$10 a day, and some have made more than \$20 a day!

Our business books, if we had room, or were at liberty to publish names, would show wonderful results, obtained by many individuals during the past year. We could tell of *Ladies*, who have cleared over \$1000 each by the sale of premium articles secured from this Office; of *Students*, who have thus procured the

means of educating themselves; of *Teachers*, who have doubled their salaries by a few evenings' canvassing; of *Postmasters*, or their clerks, who have done the same; of *Churches* and *Schools* supplied with musical instruments by the united efforts of a few of the members; of *Pastors*, supplied with desirable articles by their own exertions, or those of their parishioners; of multitudes of *Families* supplied, without cost, with Sewing Machines, Clothes Wringers, Washing Machines, etc.; of many *Gardens*, planted with good vegetables and beautiful flower seeds obtained from our premiums; of dozens of excellent gold and silver *Watch-es*, sent out warranted; of numerous *Farm Shops*, and young *Mechanics*, supplied with chests of the best *Tools*; of very many tables adorned by our superb *Tea Sets*, *Casters*, etc.; of hundreds of first quality *Gold Pens*; of Orchards, set with our *Nursery Stock* premium; of large numbers of superior *Guns* of different sorts; of *Barometers* and *Mathematical Instruments*; of *Mowing Machines*, *Plows*, and the like, obtained for lists of subscribers; of thousands of useful *Books* and *Volumes*, all sent free to our working friends; of a great number of *Boys and Girls*, who are the happy owners of a good *Dictionary*, or other useful article, earned all by their own canvassing efforts.

Plenty of all these good things remain for *YOU*, and all others desiring them, which the Publishers will be happy to distribute to those who will simply take the little time and trouble required to collect lists of names. Look over what follows: See the list of articles; send for the full description, if you have it not; choose the articles most desired, and they can soon be obtained without money cost.—(See October *Agriculturist* for description of articles, or send for a printed Premium List, which will be forwarded free to all applicants.)

It is **Easier than you would suppose**, to get up a premium list! Hundreds have written this, after a little experience. Take a copy of the paper, show what it is, how much it gives in a year for less than half a cent a day, or less than three cents a week, and few will fail to make so good an investment. They will thus be benefited, and you will soon have names enough to secure the premium for your trouble.—TRY IT!...To-day.

If from any cause one fails to get the larger premium desired, the names can be used for a smaller one.

As fast as obtained send us the names, that each subscriber may begin to receive the paper, and when done canvassing, choose the premium, and it will be promptly furnished. Send the exact money with each list, and be sure to mark each list "For Premiums." If it is so designed, that you may be properly credited in our premium record book.

NOTE THE FOLLOWING

Sundries!—Specimen numbers, Show-bills, etc., furnished free, on application, but sparingly, as they are costly. NOW, in this winter season, is the best canvassing period, but three or four months can be taken to extend clubs begun now. Premium Clubs may contain names from different post-offices, if all are sent by one person. Old and new subscribers are counted, but part should be new subscribers. In the Table the regular cash price of each article is given; and in the next column the number of names required at \$1.50 each; and in the last column the number required at the lowest club price (of \$1 a year, for twenty or more names). Any one getting up a club at \$1 or \$1.25 each, can, if preferred, add

money enough, to bring the names into the \$1.50 column. ...Remit in drafts or checks on New-York City banks, payable to the order of the Publishers; or in Post-office money orders; or in registered letters, if money must be sent. ...See the Basket item about "lost letters," etc.

Table of Premiums and Terms, For Volume 27—(1868).

No.	Names of Premium Articles.	Price of Premium at \$1.50	Number of Subscribers required at \$1.50	Price of Premium at \$1.25	Number of Subscribers required at \$1.25
1-	Garden Seeds for a Family (40 kinds) \$5.00	33	27		
2-	Flower Seeds for a Family (100 kinds) \$3.00	27	27		
3-	Nursery Stock (Any kinds desired) \$3.00	27	27		
4-	Four Grape Vines (13 of No. 1) \$15.00	37	30		
5-	Concord Grape Vines (100 of No. 1) \$12.00	19	65		
6-	Japan Lilies (12 bulbs) \$5.00	33	15		
7-	Sewing Machine (Grover & Baker's) \$35.00	49	240		
8-	Sewing Machine (Horse Machine Co.) \$30.00	61	270		
9-	Sewing Machine (Singer's Tailoring) \$30.00	61	270		
10-	Sewing Machine (Florence) \$30.00	61	270		
11-	Sewing Machine (Willcox & Gibbs) \$35.00	61	240		
12-	Sewing Machine (Tuttle & Lyon) \$30.00	61	270		
13-	Sewing Machine (Wheeler & Wilson) \$35.00	61	240		
14-	Washing Machine (Dodge) \$14.00	21	70		
15-	Tea Set (Whit's best Silver Plated) \$30.00	49	240		
16-	Tea Set (Whit's best Silver Plated) \$30.00	49	240		
17-	Caster and Fruit Basket (do. do.) \$30.00	41	140		
18-	Ice or Water Pitcher (do. do.) \$15.00	18	58		
19-	One Dozen Tea Spoons (do. do.) \$6.00	15	45		
20-	One Dozen Table Spoons (do. do.) \$12.00	18	65		
21-	One Dozen Dining Forks (do. do.) \$12.00	18	65		
22-	Ten Knives and Forks (Putterson Bros.) \$30.00	37	30		
23-	One Silver and Fork (do. do.) \$5.00	11	50		
24-	Cutting Knife and Fork (do. do.) \$5.00	11	50		
25-	Musical Box (Shell Case) \$15.00	22	75		
26-	Mathematical Sector (do. do.) \$15.00	22	75		
27-	Melodion, Sature (do. do.) \$12.00	18	60		
28-	Calvert Piano (Carline, Dooler & Co.) \$30.00	80	1150		
29-	Piano, Subano and Steel (do. do.) \$30.00	80	1150		
30-	Ladies' Gold Watch (Beautiful) \$100.00	130	400		
31-	Silver Watch (Valuable Time-keeper) \$32.50	48	168		
32-	Double Barrel Gun (Comber & Ayres) \$30.00	61	270		
33-	Repeating Shot Gun (Roper Rifle Co.) \$30.00	61	270		
34-	Spencer's Breach-loading Rifle (Hunting) \$30.00	61	270		
35-	Tool Chest (Putterson Bros.) \$45.00	61	270		
36-	Case of Mathematical Instruments \$30.00	18	65		
37-	Case of Mathematical Instruments \$30.00	18	65		
38-	Gold Pen, Sil. Case, E. (Warren & Spalding) \$15.00	11	55		
39-	Gold Pen and Silver Case, F. (do. do.) \$5.00	14	42		
40-	Barometer (Woodward's Mercury) \$15.00	22	75		
41-	Barometer (Woodward's Mercury) \$15.00	22	75		
42-	Buckeye Mowing Machine, No. 2 \$15.00	150	450		
43-	Albion's Patent Cultivator (No. 1) \$10.00	100	300		
44-	Pump and Sprinkler (Pagers) \$5.00	12	37		
45-	Family Scales (Fairbanks & Co.) \$10.00	18	58		
46-	Building Blocks (Cravath's) \$5.00	6	60		
47-	Pocket Lanterns, One Dozen \$5.00	12	48		
48-	American Encyclopedia (Appleton) \$30.00	60	325		
49-	Encyclopedia (Grove & Livermore) \$30.00	60	325		
50-	Any Back Volume Agriculture \$15.00	21	75		
51-	Any Two Back Volumes \$30.00	42	150		
52-	Any Three do. do. do. \$45.00	63	225		
53-	Any Four do. do. do. \$60.00	84	300		
54-	Any Five do. do. do. \$75.00	105	375		
55-	Any Six do. do. do. \$90.00	126	450		
56-	Any Seven do. do. do. \$105.00	147	525		
57-	Any Eight do. do. do. \$120.00	168	600		
58-	Any Nine do. do. do. \$135.00	189	675		
59-	Any Ten do. do. do. \$150.00	210	750		
60-	Any Eleven do. do. do. \$165.00	231	825		
61-	Any Back Volume Agriculture \$15.00	21	75		
62-	Any Two Back Volumes \$30.00	42	150		
63-	Any Three do. do. do. \$45.00	63	225		
64-	Any Four do. do. do. \$60.00	84	300		
65-	Any Five do. do. do. \$75.00	105	375		
66-	Any Six do. do. do. \$90.00	126	450		
67-	Any Seven do. do. do. \$105.00	147	525		
68-	Any Eight do. do. do. \$120.00	168	600		
69-	Any Nine do. do. do. \$135.00	189	675		
70-	Any Ten do. do. do. \$150.00	210	750		
71-	Any Eleven do. do. do. \$165.00	231	825		
72-	Downing's Landscape Gardening \$10.00	150	450		
73-	Cummings & Miller's Architect \$10.00	150	450		
74-	A \$10 Library (Your choice) \$10.00	150	450		
75-	A \$15 Library do. \$15.00	225	675		
76-	A \$20 Library do. \$20.00	300	900		
77-	A \$25 Library do. \$25.00	375	1125		
78-	A \$30 Library do. \$30.00	450	1350		
79-	A \$35 Library do. \$35.00	525	1575		
80-	A \$40 Library do. \$40.00	600	1800		
81-	A \$45 Library do. \$45.00	675	2025		
82-	A \$50 Library do. \$50.00	750	2250		
83-	A \$55 Library do. \$55.00	825	2475		
84-	A \$60 Library do. \$60.00	900	2700		
85-	A \$65 Library do. \$65.00	975	2925		
86-	A Choice of Good Books (See Terms below) \$10.00	150	450		

Only good articles.—We are careful not to place upon our list anything for a Premium which is not the best, and in all respects, what is claimed for it. All, therefore, who secure premiums, may be sure that they are not running the risk of getting poor or indifferent goods. No charge is made for packing or boxing any of the articles in our Premium List. The forty-four Premiums, Nos. 1, 2, 6, and from 36 to 39, and from 50 to 86 inclusive, will each be delivered FREE of all charges, by mail or express, at the Post-Office or express office nearest recipient, to any place in the United States or Territories, excepting those reached only by the Overland Mail.—The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance that may be specified.

Nos. 50 to 60—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-sixth Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 sent by mail, as they must be post-paid. They are put up in clean numbers, with the Index to each

any wonder, then, that there are so many complaints of losses by mail? And is it not evident that in 90 cases in 100 the fault is with the *writers*? Yet some people complain if publishers and others do not assume all losses of money said to have been properly mailed to them. Nobody is willing to believe that he could have made any mistake, and the responsibility for them is pretty well distributed among all classes. We have heard parties assert that on such and such days they positively mailed us subscription money "all right," when we had in possession the very letters referred to, and they had no signature or other marks to show where they came from. We think our correspondents must be unusually accurate, however, for of the more than 100,000 letters annually sent to us, there cannot be anywhere near 1,333 defective ones; yet there are some, and the lesson to be learned from the above notes, by every one, is: Be very careful, 1st, to direct every letter fully and *plainly*: 2nd, to *sign* it; 3d, to give it the proper date, with, 4th, your own Post-Office, County, and State, and, 5th, seal it strongly after everything to be enclosed is surely put in! Write matters relating to business, and, to the editors, on *separate* pieces of paper, with name, date, and place on *each* paper. . . . Just as we close this, a well written letter comes in from Ohio, part of it to one person, and part to us in a postscript to the other letter. It has money enclosed, about which nothing is said; and *there is no signature to show from whom it comes*. What shall we do with it—and with others like it?

The American Horticultural Annual for 1868.—This record of the year just passed is now ready, and will be found full of useful references in all departments of horticulture. Besides being a compendium of the new fruits, flowers, vegetables, etc., published during the year, it contains original articles of permanent value, by well known writers on horticultural subjects. The editor has had the collaboration of the Hon. M. P. Wilder, Dr. J. A. Warder, Peter Henderson, Saml. B. Parsons, J. J. H. Gregory, Josiah Hoopes, Geo. W. Campbell, James Vick, F. K. Elliott, A. S. Fuller, Thomas Meahan, and others. An Almanac, a carefully prepared Calendar for each month, several handy tables, lists of publications and of nurseries, are to be found in its varied contents. The illustrations are of great beauty, and are all prepared expressly for the work, which we trust will prove as acceptable and popular a hand-book as its predecessor.

Humbugs.—Happily for own comfort and convenience, we are, this month, relieved from the necessity of making a long list of exposures of Humbugs, though, we fear, the respite will be a short one, and that we shall have to continue to sweep at the Augean stables. The subject cannot be dropped until the vile race of swindlers is exterminated or starved out by the thorough diffusion of knowledge of their operations and subterfuges. We have the usual supply of letters concerning the operations of the swindling gentry, but they happen to be similar to the operations we have recently exposed. And, then, a special relief to our labors just now is found in the help from Congress and the Tribune, both having come to our aid. Hon. Mr. Van Wyck offered and secured the passage of a resolution in Congress, demanding of the Commissioner of Internal Revenue, why he exempted from the special lottery tax the scheme known as the "*Cottysburg Legion for Invalid Soldiers*." Mr. Van Wyck stated that the firm, offered as a \$50,000 prize, was in his district, and was not worth \$50,000. He said, he understood that the diamonds offered were worthless stones, and he blamed the P. M. General for having requested all postmasters to aid the enterprise. The Tribune, which has, in times past, published so many advertisements of various parties, whom we have denounced, has recently given the Humbugs some hard knocks. With these efficient helpers in the work, we are quite glad to take a month's respite. We simply add here, beware of certain new newspaper enterprises just now. There are quite a number of these started, under various names, and with great pretensions and "enormous circulation," but really for further swindling enterprises. Some pretend to send by mail \$100 bills in copies of the paper, which is both unlawful and improbable; some, like the "World of Plenty," show their character on their face.

An Excellent Ointment for chapped lips and hands, for dry sores, for burns, for sore nose, for oozing corns on the feet, for piles, in short for any diseased surface where a soft protecting coating is required, is what is called "*Glycerine Ointment*." This can be readily prepared by any druggist, by simply rubbing into what is termed "cold cream" a little glycerine—just enough to give it a soft, lard-like consistency. More glycerine can be added in winter than in summer. A drop or two of oil of roses stirred in, gives it an agreeable perfume. It should be kept well corked, and be made fresh

every month or two. When the hands become chapped or roughened by cold weather, smear them with a little of the glycerine ointment at night, rubbing it in, and then wipe off all that will soil the clothing, and the skin will usually be soft and pliable in the morning.

"Baggage Smashers."—**To R. R. Managers.**—A species of downright robbery is now practiced upon travelers on very many of the public conveyances in this country. We assert as a fact from our own observation, that many men employed to handle baggage take a special delight in seeing how hard they can pitch a trunk about. We have seen them use extra exertions to give a large trunk a hard thump, and to see how far they could throw a lighter one—as if trying to earn the name of a "baggage-smasher," instead of that of careful baggage-men. Let any of our R. R. Managers stand where they will not themselves be seen, and note the handling of the baggage at a station. They will usually see the trunks thrown out, or in, without the least care to save them—the corner of one pitched with force into the side of another—in short, no care is used to spare them in any way, but everything done to injure them that can be done. Probably forty thousand travelers' trunks are daily handled upon our railroads, in the aggregate, and the unnecessary hard usage they receive amounts to 25 cents each, or \$10,000 a day! Judging from our own past experience, if setting out upon a journey, in this country, we would willingly give 25 cents a day in advance, to have our trunks handled with the same care that is exercised on the European railroads. Here, 100 days' traveling and stopping will thoroughly use up \$25 trunks, no matter how strongly made. After a six months' tour in Europe, including 12,000 miles by railroad, with our baggage taken off and carried to sixty different hotels, and returned to the cars, the trunks came back in a condition suitable for another trip of equal length. In but few of the railroads was any charge made for carrying the baggage. A traveling companion, who also brought his trunk in perfect condition to New York, had it jammed, broken, and the contents injured badly, in going barely 150 miles from the city. Will not our R. R. Managers do a great favor to the public, by looking into this matter—giving a word of caution to the careless or mischievous, and dismissing the incorrigible baggage-smashers?

Water-proof Leather Preservative.—R. J. Smith, of Ulster Co., recommends the following, which is said to have been in use among New England fishermen for 100 years, when it was published in an almanac for 1794. "Take one pint boiled lard oil, half a pound mutton suet, six ounces clean bees-wax, and four ounces resin; melt and mix over a fire, and apply while warm, but not hot enough to burn the leather. Lay it on plentifully with a brush, and warm it in."

The Illustrated Annual Register of Rural Affairs for 1868.—This little annual, by John J. Thomas, is published by Luther Tucker & Son, Albany, N. Y., and contains the usual amount of interesting matter. The leading articles are upon the Rotation of Crops, Small Fruit Culture upon the Hudson, Shrubs and Shrubberies, etc. This is the fourteenth annual volume, and the whole set, nearly bound, forms a valuable addition to any agricultural library, whether public or private. Price by mail, 30 cents.

The Practical Entomologist.—This periodical, which was too good for the price, stopped at the close of its second volume. The American Entomological Society, by whom it was published, lost money in the attempt to disseminate a popular knowledge of insects, but they doubtless did much good in the publication of even two volumes. These are full of interesting and practical matter, relating to insects, written in an attractive and popular style. The two volumes have been bound in one, and are sold (by mail) at \$2.25. They may be had of E. T. Cresson, 518 South 13th Street, Philadelphia, or by sending to the office of the *Agriculturist*.

Dwarf Pear Trees.—"New Subscriber," Mansfield, O. If we infer rightly, from your letter, your question is with reference to fruit for market. If so, we should plant trees on pear roots, by all means.—Answers to the remaining questions require too much space for a basket item; will try to reply to them in a general article on the subject.

Criticism.—"Subscriber." We cannot undertake to keep other journals from publishing nonsense. It is only when their teachings are positively injurious that it is worth while to criticize. We must therefore decline your article.

Rose Leaves.—"Virginia Lady." We cannot tell what causes the trouble—whether insects or

fungus—from the description. Please send fresh leaves by mail, next spring.

Ferns and other Wild Plants.—"L. C. F. W." South Orange, N. J. Gray's Manual of Botany gives descriptions of all the wild plants east of the Mississippi and north of Virginia. Illustrations are given of the genera of the ferns. The queries relating to exotic ferns we will bear in mind.

Huckleberry Tomato.—Last year a friend in California sent us some seeds under this name, stating that the fruit was used there to make pies, which resembled those made of huckleberries. This year the seed appears in the catalogues. Mr. A. F. Knobloch writes from Louisiana that he has bought the seeds, and that the plants are the same as the Wild Nightshade, which the crores call *Joyella*. The same was tried at the Royal Horticultural Society's gardens, at Chiswick (Eng.) and is stated in the last *Florist and Pomologist* to be "one of the forms of the little, black fruited *Solanum nigrum*." This plant has a rather bad reputation, and we should rather not have our pies made from its fruit, though cooking may destroy any poisonous properties.

Medusas and Rotifers.—"J. M. S." Jackson Hall, Pa. Medusas are jelly fishes that live in salt water. Rotifers are microscopic crustaceans. Tenny's Natural History will give a good general idea of these, and other less known forms of animal life.

Fruit in Nebraska.—A correspondent writes: "There is beginning to be much interest in the subject of fruit growing all over the State. An agent for a single nursery East, told me that he had, within two months time, obtained orders for \$10,000 worth of fruit trees. Hardy grapes can be cultivated with success."

Fine Premiums for Grapes.—The Longworth Wine House offers a silver pitcher, waiter, and goblets of the value of \$350, as a first premium, and second and third premiums of the value of \$100 and \$50. The first premium to be given to the best general wine grape of our whole country. The second premium to be given to the best variety of grapes for wine purposes in the State of Ohio, provided it is not awarded to the grape that receives the first premium, in which case it will be given to the second best wine grape in the country. The third premium is to be given to the best table grape, for general purposes, in the country. Our requirements are that the plants, when generally cultivated, shall be perfectly healthy, hardy, and productive, and the fruit shall produce a wine of good quality as to flavor, strength, and quantity. The fruit shall be shown at the coming Fall Consolidated Exhibition of the American Wine Growers' Association of Ohio, and Cincinnati Horticultural Society, in quantities of ten pounds or more, with samples of the wines from the competitors for the first two premiums, if practicable. The exhibition will take place at Cincinnati, on September 23d, 1868. The silver ware has already been made, expressly for this award, and is beautiful in design and workmanship.

Are Plants Detrimental to the Health?—Some time ago, the Journal of Botany (English) published the statement that four assistants in the Kew Herbarium resigned on account of ill health, three of whom died, etc. This was copied in various papers, with such additions and improvements that made it apply to the Kew Gardens, and to plant culture generally. The article in its latest form is quite a bugbear, and has been sent us by a correspondent, who is evidently concerned at the statement that "in all gardens the health of practical cultivators is exposed to a certain degree of risk." So is the health of everybody everywhere. It may satisfy our friend "J." to know that the story has just this foundation. Of the assistants in the *Kew Herbarium*, not gardens, "Two, unfortunately, succumbed to constitutional ailments; of these one, at least, was seriously ill before he entered upon his duties; the other died in India; while a third was 'tomahawked' in Australia."

A String of Queries.—"J. H. P." Geauga County, Ohio. Your letter is interesting, but another time have the kindness not to put such widely different subjects on one sheet. 1. One hundred and twenty-two and a half pounds of squashes to one vine is large, but it has been much exceeded. 2. The value of stable manure can be increased by composting with muck and leaves—do not use lime. 3. It is best to plow in the garden manure. 4. Fall setting, except in severe climates, is best for blackberries and raspberries, and then they should be cut back to a few inches. 5. The lecturer who told you that small fruits did best on poor soil, didn't know much about it. 6. Study any standard work on

grape culture. 7. The renewal system in strawberry culture has its advocates, and in localities where labor is scarce, may pay better than cultivation in separate hills.

A California Grape Book.—"Grape Culture; or Why, Where, When, and How to Plant and Cultivate a Vineyard, Manufacture Wines, etc." Especially adapted to the State of California, and to the United States Generally." By T. Hart Hyatt, San Francisco. H. H. Bancroft & Company. A work of 264 pages, which discusses Grape Culture mainly as followed in California, but which will hardly be of much use elsewhere. It contains many useful statistics and descriptions of the varieties cultivated on the Pacific Coast, and will, no doubt, be found useful in that remarkable grape region.

Grape Cuttings.—"Novice." If you have only 10 or 12 single eyes, and the kind is rare, you had better get some experienced propagator to start them for you. If as a "Novice" you wish to amuse yourself, you can try your eyes in a pot, in a hot-bed, the last of February or early in March. Propagators differ as to the amount of wood left on the cutting, and the form of it. We cannot give the space now to describe them. A half an inch of wood above and below the bud will probably answer your purpose as well as any.

Essays on Localities.—A surprising number of very long, and often well written, articles come to us, particularly from the Southern States, praising a particular township, in a particular State, as the earthly paradise to which all people are invited to emigrate. Some of these articles are evidently written with an eye to land speculation, while others are of a disinterested character. Did we publish all the articles of this kind we should have little room for anything else. While such information is of use to us in various ways, our friends who write very long articles must not be disappointed at not seeing them in print.

Fruits from Iowa.—"N. B." The specimens you send are the well known Ground Cherry, or Strawberry Tomato (*Physalis viscosa*). We have commended it for many years as an agreeable fruit.

A Bad Weed.—Hugh Miller, Mich. The specimen is *Xanthoxylum spinosum*, the Thorny Clot-bur. It is an ugly creature, and we shall publish its portrait. We never knew it so far away from the sea-coast before.

What's in a Name?—At the meeting of the American Pomological Society, the Bearre Diel was discussed; a St. Louis paper reports it as the "Bear Ideal."

Fine Cranberries.—Mr. Orrin Cook has sent us very fine specimens from his cranberry meadow. We do not know but they might be excellent in size and beauty, but we never saw finer cranberries.

Beane.—C. H. C., Shelby, Mo. This is cultivated for its leaves only. One or two of them, placed in a tumbler of water, will in a short time form a thick mucilage, which is used in affections of the bowels, in place of gum arabic water and other drinks of the kind.

Rabbits in the Orchard.—C. L. Jessop, Baltimore Co., Md. The use of blood to prevent rabbits gnawing trees, is a Western practice, and there it is found that one application answers for the winter. It is scattered upon the trees by means of a swab; one may be readily made of corn-bushes, and tied to a stick.

Shutters for Hot-beds and Frames.—In England, they make a light shutter, by tacking a straw mat to a frame, cover the mat with gas-tar, and then sprinkle on all the sawdust the tar will hold. Said to be very durable, and excellent as a protection against frost.

Kittatimny Blackberry.—J. S. Conklin, Ohio. The discussions at the meeting of the American Pomological Society showed that this variety maintained its reputation for productiveness and hardness all over the country. Superior in flavor to all others.

Beautiful Begonias.—For richness of foliage few plants exceed the Begonias. Some of the most beautiful of these we have ever seen are in a recent importation by Olm Bros., of Springfield, Mass.

Work from Measure.—Much bungling in mechanical work of all kinds would be avoided if amateur mechanics would only first make an accurate working drawing. If one is to lay out a garden, whether for use or ornament, it is best to make a plan, drawn to a scale. It will save a great deal of time when the work is in progress, as there need be no stopping for consultation.

All the head-work can be done these winter evenings, and when changes are to be made, they are much easier done on paper than on the ground. A large-sheet of stiff, smooth, brown paper will answer; draw the plan first with pencil, and when satisfactory, go over the lines with ink, and put down the measurements in plain figures.

Bad Luck with Poultry.—W. P. Page, of Knights Ferry, Colorado, is sadly in need of information about poultry ailments. We would be glad to publish any information which is to the point. He writes: "The past year I hatched over 800 turkeys, and shall raise twenty. Most of them lived till they were about four weeks old, and some a longer period, when they would refuse to eat, and die in a day or so. Their first food was corn meal, and as soon as they would eat it, wheat, which is the universal feed for poultry in Colorado. I had twenty-one hens and fifteen gobblers, which I neglected to dispose of in season, and kept over. Besides, a disease has broken out among my grown chickens and old hens. The tongue, roof of the mouth, and windpipe, became coated with a yellow, offensive substance. It eats into the tongue, fills up the windpipe, and causes suffocation. I lost one to-day, and found the windpipe was coated down three inches. Others are constantly gagging, the mouth is frothy, and they will live a week or more. I can discover nothing the matter with them otherwise; no running at the nostrils, or froth in the eye. A few have their eyes swelled; it commences in one eye, and if they do not recover, spreads into both. I am located on a dry, sandy hill, with a free range of the whole country around. It is very hot in the summer, and I have no shade trees near. The water I have to bring and place in shallow vessels, which arrangement I do not like. I think water in a larger body would be better. In the winter and spring, a mining ditch of clear water runs near the house."

"Six-Leaved Clover."—"S. I. B." We never noticed a plant to which all the leaves were divided into more than three parts. Yours with six leaves, all through, is a curious sport.

Eradicating Ivy.—W. D. Arnold has a large quantity of Poison Ivy on land he wishes to plow; the ivy poisons him badly, and he is afraid to grub it up. He asks if it cannot be killed by applying salt. Salt enough to kill the Ivy would keep the land useless for a long time. The poison affects but a very small proportion of people, and it would not be difficult to find workmen who are insensible to its action to grab the thing up.

Kyanizing.—Andrew Bean, Cortlandt Co., N. Y. Kyanizing is, strictly, the use of a solution of corrosive sublimate for the preservation of wood; this was the original process of Kyan, the inventor, but the name has since been used in speaking of the employment of other preparations. A solution of blue vitriol (sulphate of copper), one pound to three gallons of water, will answer for your hop-poles, but why not use coal (or gas), tar, which is cheap, easily applied, and effective?

Butter-working Churns.—George D. Fort, Burlington, Vt. We have seen several butter-working churns. Some are very good, like the "Julien," but none work the butter thoroughly enough. They are convenient to get out most of the buttermilk, but after this, the butter should be removed, and worked over.

Clotted or Bloody Milk.—Chester Palmer, of Lake Co., reports his practice as follows: "Take a potato or two, and with a penknife bore out a hole in each, large enough to insert a piece of the root of bloodroot, which do, and feed to the cow. You will see a change for the better in 12 hours."

Dog Law in Tennessee.—They propose in this State to exempt one dog to each family—enough, certainly, to make sheep-scare. We are curious to know how many pups constitute an outfit for an average Tennessee family. Will some of our exchanges tell us?

Hog Cholera—Tar as a Cure.—Tar has frequently been recommended as a cure for hog cholera, which name is probably given to two or more distinct diseases. Our correspondent, F. L. Walker, of Caswell Co., N. C., has such success, that we give his communication: "As soon as I find the hog is sick, I have it caught and thrown upon its back; and take a ball of tar, a little larger than a hickory nut, on the end of a small stick, and put it down the hog's throat, and hold the hog until the tar is swallowed. I then cut off his tail or cut the ear, although I don't know that the bleeding is an advantage, but think the tar is what effects the cure. I cured a good many very bad cases in this manner. Tar has been given by rubbing it on the corn, but in that way I don't think the hogs swallow enough of it."

Tainted Meat Barrels.—Several persons have sent us their methods of cleansing meat barrels, from which we select the following. E. J. Cole, Iowa, washes the barrel first, and crushes a lot of brimstone two inches long, and puts it on a small fire, over which he inverts the barrel. Then bricks are placed under the edge of the barrel, to give the necessary draft. The barrel is allowed to remain in this position until the brimstone is consumed. Another, at Correy, Pa., says: "Fill the barrel with good hay, heads of grass is best, pour on boiling water, cover tight, and let stand until cool. Repeat the operation if necessary." "G. S. S.," Lincoln, Del., recommends soaking them in boiling hot water and ashes. The vessels thus treated in scalding hogs are made sweet.

Moths in Furs.—L. F. Whitaker. The eggs are hatched the same season they are laid, and there is no probability that any are now in the furs; the larva, or that form of the insect which does the mischief, may be seen if there. A careful baking, or shutting the furs in a tight box, first sprinkling with pure benzine, will kill it.

Street Sweepings are an excellent fertilizer, and ought to be a source of income to all city corporations. In Paris, they are sold for \$600,000, annually, in gold. In New York, they tax the people a larger sum to get rid of them. Tax payers ought to study the cause.

Honey.—Mr. G. Steiner, of Atchison Co., Mo., hived two swarms in one hive, on July 3d and 4th. The yield of the hive was 130 pounds of fine honey.

Salt around Gate Posts.—J. B. Hill, Vt. You ask if it will pay to use salt around fence posts to keep them from being heaved in clayey land. It will pay, we think, to sprinkle a handful or two every season around gate posts, and where it is of especial importance that posts should not be heaved. Refuse brine would do as well. It works so long as it remains in the soil near the surface around the posts, by preventing its freezing, or so weakening the ice in the soil that it cannot lift the post. It may be applied any time before the frost comes out of the ground.

American Sheep Shears.—We have hitherto been too much dependent upon England for our best cutting, and sheep shears were no exception. Hardly willing to trust, without the test of use, our own favorable impressions in regard to the excellence of these sheep shears, made by Henry Seymour & Co., of this city, we have submitted them to the judgment of practical sheep shearers, who are much pleased with them, and to experts in steel manufactures, who pronounce an unqualified approval, confirming us in our own opinions.

Rose, "Gem of the Prairies."—Mr. A. Burgess of Glen Cove, N. Y., a few years ago raised a seedling which is a cross between the well known Queen of the Prairies and the Hybrid perpetual, Madame Laffay. It is a beautiful climber and very fragrant. Mr. Peter Henderson paid \$300 for the stock of it—about 20 plants—a fact which shows that native seedlings are appreciated in commerce, provided they have merit as well as novelty.

Milking Machines.—D. N. Barnes, of Kansas, seelag cow milkers advertised in some agricultural papers, writes to inquire about their value. We find it very difficult to learn much about them. Those who sell them keep very shy of the *American Agriculturist*,—so do dealers in hunabags generally. We are willing and desirous of giving any such thing a fair investigation and trial, if possible, and have tried, and failed, even to witness a trial of the cow-milker.

How to Renovate Velvet.—Henrietta Clark, McLenn, Ill., writes: "Have a flat-iron hot enough for ordinary ironing, with any contrivance that will support it with its face upward, (small pieces of boards nailed together like the sides of a box, or a thick rug in your lap.) fold a towel until it is just large enough to cover the face of the iron, wring it very dry from water, as hot as you can bear, and place it on the iron; then the velvet, with its right side upward. Now with a soft brush, or a piece of soft woolen goods, brush it lightly, all the time one way, until the creases are removed; then spread it on a flat surface to remain until it is perfectly dry."

Potato Queries.—J. H. and others. The Early Goodrich is no doubt the best and most productive variety, generally obtainable of dealers. Sebac is smaller, rounder, not quite so early; esteemed in New England. Harrison is a good winter potato, not of quite so fine a quality as the Peach-blow and Mercer, but more healthy and productive. As to where they may be had, we cannot refer you to one seedsman rather than another. Any first-class establishment can supply them. See our advertising columns for potatoes and seeds of all kinds.

The Commissioner of Agriculture.

—The President has nominated, and the Senate confirmed, Col. Horace Capron as head of the Department of Agriculture. The gentleman has assumed a position in which he has an opportunity to do much good or to be considerably worse than useless. We shall watch his doings with much interest, and shall be as ready to commend any good work as we have in the past been to censure official incompetency. We hope for the best.

Sowing Grass Seed on Old Meadows.

—W. D. Arnold, Saxtonville. The grass seed would catch if the meadow were scarified with a harrow, and the seed hushed in. Sow four quarts of Timothy and four pounds of clover seed to the acre, the last of March.

Farmers' Fruit Clubs.

—Some good friend sends us the proceedings of the Alton, Ill., Horticultural Society, cut from the local paper, and we wish he would send one to every reader of the *Agriculturist*, just to show what may be done in every town throughout the country. Do you wish to know what apples to plant? Ask Smith to come and take tea with you next Thursday, and stop and bring Jones as he comes along, on condition that each shall bring a specimen of every apple he has in eating condition. Overhaul your own apples, and if there is any particularly nice variety in the neighborhood, or on sale in town, get a sample. After tea (and eat) apples. Probably twenty sorts will be this got together, and the talk will be worth five to fifty dollars to each one present. There will be a Pomological Society before you know it; of course next month all will meet at Jones', and each will ask in one or two more. The varieties of fruit are so many, and their success so local, that these neighborhood meetings are of the greatest value. Begin them in the afternoon, so that the orchards can be seen, the pruning explained and criticized. If the names Horticultural or Pomological Society seem too formidable, call it a Fruit Club, and don't spend time about constitutions.

Is Lobelia a Poison?

—In October last, we protested against the recommendation in the reports of the Farmers' Club of the use of so "violent a poison" as lobelia. This has brought out a number of letters, some defending lobelia as the most harmless of weeds, and others asking our authority for the statement. We could give any amount of authority, but we turn to the first one at hand, Taylor's Medical Jurisprudence, and find that in England, in 1838, the coroners' juries brought in a verdict of manslaughter in six cases of poisoning by lobelia. We do not consider lobelia to be any more poisonous than many other drugs; we object to the recommendation of the indiscriminate use of any potent drug. Lobelia has its place in medicine, but, like every other violent poison, it should only be administered under proper advice.

A Long, Straight Shot.—During the night of Nov. 20th, a huge mass of iron, (the steamship *Aleppo*), was shot out from the south end of Ireland westward, and kept in rapid motion 290 to 390 miles a day, by steam and wind power. The winds blew in great gales, now from one direction, and now from another—at one time with such force as to tear a strong sail into a thousand tatters. The sun and stars remained so concealed from view as to prevent any accurate observations. The compass, as is well known, varies as much as 30 degrees from the true north in some parts of the Atlantic. No land was seen, and no ships spoken that could tell us where we were, yet so nicely were calculated the swerving effects of the different winds, the ever-varying velocity given by the sails and screw, with the retarding of the head seas, and the changes required by the compass' variations, that on the first sight of land, on the morning of the 30th, we were only a few miles south of Fire Island Light House, or just where we wanted to be! That an immense floating mass can thus be hurled forward more than 3000 miles over a wilderness waste of waters, affected everywhere by so many changing influences, and yet strike at exactly the desired point, is wonderful, to say the least. What would Columbus say if he could return, and now cross the Atlantic in a steamship!

Crossing the Atlantic.

—The failure of the Great Eastern, last May, after the leading passenger ships were filled, drove us into the Tripoli, of the so-called "Extra Cannon Steamers." We were so well pleased with the ship, its officers, and all its appointments, that we came home from choice in one of the same class of ships. These steamers, strongly built entirely of iron, though designed mainly for freight, have a dozen rooms or so for Cabin passengers, located on the deck, capacious, well fitted up, and airy, with large windows looking out upon the sea. The table is served the same as upon the mail steamers, with plenty of attendance, and the cozy, unrevolved dining saloon is more agreeable than that of regular passenger ships, while the fare is

lower. The only objection is, that they are usually a day or two longer in making the passage—a thing of no consequence to those who go for pleasure, as the sea voyage is usually enjoyed after the first few days of "breaking in." And the time is not bad, usually within twelve days, from New York to Liverpool. We left Queenstown in the *Aleppo*, Capt. Harrison, on the evening of Nov. 20th, and reached Sandy Hook before noon on the 30th, making the passage in 9 days and 23 hours, allowing for the change of time. From our pleasant experience on the Tripoli, last May, and on the *Aleppo*, in the briefest month of November, we can advise our friends crossing the Atlantic, to look out for the *Aleppo*, the *Siberia*, the *Palmyra*, the Tripoli, the *Tariff*, etc., of the Extra Cannon line, and if they can fall in with Captains Martyn, Harrison, or Watson, they will be fortunate, we are sure, though for ought we know the other Captains of this line are equally as pleasant and efficient officers.

Another Foot Warmer.—Mr. Judd, not being aware that we had an article on this subject already printing on the inside sheet, (page 25), sends us the following: "Keep the head cool, and the feet warm," is the old wise adage, put forth when people walked more than now; but how is one to keep his feet warm in a cold church or in a railway or other carriage? I picked up in Paris, (for 12 francs, or \$2.25 specie,) a convenient *Foot Warmer*, sketched herewith. It is a tin case of the form shown, 11 inches long, 8 inches wide, and 3 inches



Fig. 1.

thick in the middle; one edge is thicker than the other, to fit it to the bottom of the feet when it lies on the floor. The tin case is closely covered with dark green carpeting. A small brass funnel is fitted into one side of the end, and inside, at the bottom of this, is a tightly fitting screw, of the form shown in Fig. 2. The small handle is very convenient for carrying it to church, where the floors seldom get well warmed at morning service. One of these well covered, and filled with hot water, retains its heat a long time. Ours was filled at London, and on a bitter cold day kept the feet of two ladies warm all the way to Liverpool, 300 miles, and when the water was poured out there, it was still a little warm. This can be used as bed warmers also. It may be of any desired size, and long enough to accommodate three or more persons. The form and size of ours is a convenient one for carrying in the hand; the dark green covering renders it inconspicuous. Any tin-worker can make one for a few shillings, and it can be covered at home. The funnel and screw as sketched is the most convenient form we have seen; probably a good cork, fitted tightly, would answer, though it would perhaps leak slightly. If a cork is used, this and the carrying handle might be placed so as to always be on the upper side, and thus prevent leakage.



Fig. 2.

Painting.—With a little practice, any man can use a brush well enough for common purposes, and in all moderate weather outside work may be done very well at this season. Living rooms ought not to be painted except at a time when the windows can be open.

Keeping Fish in Moss.

—In December we gave an article on Peat Moss (*Sphagnum*) and its uses. Mr. C. F. Austin, an enthusiastic student of mosses, writes us of another use for *Sphagnum*: "When I was down in the pines of New Jersey I was told that fresh fish could be kept better in warm weather if wrapt up in this moss than in ice, and I gave it a trial. I took from a can about a dozen pickerel, and a lot of catfish and eels, and put them up for a friend in New York—all alive—in a basket of sphagnum, at nine o'clock in the morning on a hot day in June, and I was told by a member of his family that the next morning when the basket was opened in New York every fish was alive."

Coal and Peat Ashes.

—W. D. Arnold. If they are half peat, as stated, it will pay to cart them several miles. On moist clay loams, coal ashes are a good top dressing, and you may expect to get pay for your labor if you cart them a mile.

Sour Milk for Laying Hens.

—"W. S. S., Maine. Hens will eat eagerly almost any kind of animal food, in the winter, and will be benefited by it. We have fed butchers' offal from the markets, chandlers' greaves, clams, small fish, and sour milk. The laying in

winter depends quite as much upon the physical comfort of the bird as upon the feed. They must have both shelter and warmth if they are expected to lay.

Churns.

—"Which is the best one?" We have had quite a number within a few months for trial. Child's "Aerator" Churn works with great rapidity, and produces butter which cannot be excelled. The "Julien Churn and Butter Worker" turns easier, and produces equally good results, but not so rapidly. Both are good.

Small Hard Coal Most Economical.

—There is a very common opinion that large coal burns longer, and is, therefore, the cheaper. Dealers have to put the finely broken coal at a lower price, to get rid of it. This opinion we believe to be erroneous. (We speak of the hard or anthracite coal; the soft or bituminous coal, which will burn in the single piece, may well be of large size.) With large pieces, one must have a considerable number of them to keep the fire burning at all. A given weight of coal will in burning throw out the same amount of heat, whether it be in large or small pieces. If of small size, a thin layer over the grate will supply heat enough for all usual temperatures, and for cooking, and be quite as effectual as a deep mass of large lumps. A layer of two to three inches of nut or pea coal will usually do better service than six or eight inches of stove or egg size, either in cooking or warming a room. After examining the subject experimentally and theoretically, we have come to use mainly pea and nut coal for the cooking range and small stoves, with a moderate quantity of stove size when a strong fire is needed during the middle or latter part of the day. We also use the pea coal for starting the hot air furnace in the morning, with a little during the day to fill in the spaces between the large coal, which saves the use of a deep bed of it when but a moderate heat is required. When a fire is needed over night in the furnace of the dwelling, or in the green-house, we bed with a layer of large coal, fill the interstices with pea coal, and cover with ashes, or regulate by the draft door. A small quantity will thus remain ignited all night, when, if no small coals were used, a foot in depth of large coal would be required to keep the fire from going out. We are convinced that most families would find it economical to use more small coal, and less of it, in order to secure a quick, constant, and lively heat.

Starting a Fire.

—"It takes a fool or a philosopher to build a fire well," runs the old adage. We suppose the former blunders into doing it well, and the latter goes at the work scientifically. As few people belong to either of the two classes, there must be much poor fire kindling—and there is. With wood fires, the essential thing is to have a few thin pieces of dry stuff; then the larger pieces brought near enough together to keep each other warm; and, most of all, to arrange the whole so as to secure a draft. Place the fuel so that air can enter underneath, and so that the first heat can produce an upward current, and draw in fresh air to the burning point. With hard coal, there must be kindling enough at one point to produce sufficient heat to ignite at least two or three pieces of the ignited point, and then concentrate the draft of air upon the ignited point. With plenty of kindlings, the grate may be covered, but with only a small quantity of under, it should be placed all together in the middle or at one side, and a few pieces of small coal be put around it. If the grate be larger than the size of the hand, it is well to cover all but the kindling point with ashes, to confine the draft to that place, and then remove the ashes as the fire spreads. A small layer of thin paper spread over the grate under the coal, and opened directly under the kindling point, is very useful. It confines the current of air to the kindling point, and burns away as the fire spreads.

Fire "Kindlings."

—A good supply of these often gains half an hour's time in getting work started in the morning. Previous thorough drying is essential. A few fine shavings or splinters, and then larger well dried pieces to get up a strong heat at one point, are better than all fine stuff. In some European countries we found the common method of kindling material to be shavings dipped in melted resin or pitch, and then wound in balls two or three inches in diameter, like knitting yarn. They were very effective, seldom failing to ignite wood or coal, though where hard anthracite is used, a little charcoal is placed around the pitch ball. These balls are clean, easily handled and used, and are sold by the piece or by the measure, like potatoes here. (In most of Europe, potatoes and other roots, and all kinds of fruit are sold by weight, as they should be always—eggs included.) Another novel kindling material, in common use in several places, is pine cones. Those we saw at hotels were very effective in starting wood fires. They contain resin enough to give a flame for several minutes, after there is a little draft.

Compost.—"W. B. B." The wood mould will make an excellent garden compost, if mixed with one-third its bulk of stable manure, and worked over after the fermentation has become active through it, which may be known by the warmth, tested by a stick or two kept thrust into the heap. Laid up with straw manure, trodden pretty hard, and wet with barn-yard water or stable urine, it will also make good compost, if treated in the same way. Spread in layers, and sprinkled with dry slaked, (not air slaked,) lime, using about one bushel of the unslaked lime to the load of mould, it will probably become very fine and powdery, and will, at any rate, make a nice top dressing. It would be valuable also for making soils for potting plants, and mixed with manures of any kind, guano, bone-dust, hen manure, etc., for fine composts for top dressings, for corn in the hill, and many uses. The first way of disposing of the leaf mould will probably be the most profitable, if you have much of it.

Best Use for Wood Ashes.—They should be kept dry, and free from chips and sweepings, and bones. If bones that would be long decaying, and that cannot easily be broken up fine, are burned in the fire, they may be pounded fine, and may then be left in the ashes. There is no garden or field crop which ashes do not benefit. Perhaps the best use for a portion, at least, is in the onion bed. Leaf mould composted with ashes, makes an excellent dressing for strawberries, worked into the surface between the plants.

Coal Ashes.—The best use to which coal ashes can be put in winter, is probably to mix them with recent night soil in the privy, using them every day or two, to keep the contents dry and covered. They must be thoroughly sifted, free from large bits of coal, slate, or clinkers. Coal ashes may be used to good advantage as a top dressing for grass, or mingled with stiff, clayey soils.

One Handful of Hay is a small matter; one handful a day for six months makes a pretty large bundle; twenty handfuls a day for six months make quite a stack; if each handful weighs a pound, the stack will equal 3,650 pounds, or more than 1½ tons—worth about \$22, at \$12 a ton, or \$36.50, at \$20 a ton. How many farmers, keeping twenty animals, allow each to waste a handful or a pound of hay a day for want of a little attention to the feeding arrangements! A few straws at a time, dropped here and there, and trampled under the feet, will soon make a handful, and we have seen above what the handfuls amount to. This is a small matter, says one, but upon just such small matters depends a man's success or failure. One man attends to them, and at the end of twenty or thirty years has a competence for old age; another neglects them, and is always behindhand—he lives and dies, short in the pocket, and short in comfort.

A Handful of Hay is a large matter, as shown above. Suppose an animal in a warm stable to require 15 pounds of hay a day to supply the waste and growth of the body, and keep up the heat. A small crack to let in a stream of cold air will necessitate at least another pound of hay per day to furnish the extra internal heat required. Even the difference between a cold and warm shed will often increase the consumption of hay by two or three pounds a day. A single wind break or screen of evergreens or straw, or a tight fence, may save two pounds a day on each animal thus sheltered. "A word to the wise is sufficient."

A Single Handful of Manure put into a hill of corn will often make the difference between four or five little "nubbins," and six or eight great plump ears that will sell their bulk of sound corn. A thousand handfuls count up heavily in the autumn corn crib. How many handfuls of manure are daily lost in your stock-yard that might be saved in nice order by a little care in heaping up, and covering from washing rain? These handfuls of manure are more valuable to the cultivator than the separate grains of gold that the miner, with careful toil, gathers and washes from the earth and sand bank. He hunts, gathers, and saves them all, and thus accumulates money "by pils." Philosophical, successful cultivators, can see the glitter of gold even in the manure heap; they only wait a little longer than the miner for the pure gold to be washed out by the growing process, instead of in the wash pan. "A word to the wise is sufficient."

Fall Show of the American Poultry Society.—This youthful society held its first exhibition during the first week in December. No money premiums were offered—two silver cups, silver and bronze medals, diplomas, and books, being the prizes. The show of fowls was by far the best we have ever seen in this country, and though a really good hall could not be secured, and the light was very poor, yet all who visited the exhibition, and took pains to study carefully the different

coops, were gratified and instructed. The most noticeable features of the exhibition were the Brahmas, Chinchins, Gray Dorkings, Black Spanish, and French Fowls, (Crevecoeurs and Houdans). White Dorkings and Games were tolerably well represented, as were also Hamburgs and White Leghorns. Bantams have marvelously increased the number of varieties within a few years. This department was rich in fine specimens. The Seabrights, the most beautiful of all, and most difficult to breed true to markings, were not numerous. The Polands, Black and Golden, were excellent. There were several remarkably good pairs of ducks, both Aylesburys and Rouens, and a number of coops of ornamental ducks. White China Geese were in full force, presented by several exhibitors. E. A. Wendell had some remarkably fine Bremen Geese. J. Haven exhibited beautiful Lop-eared Rabbits, taking 1st and 2nd prizes, and there were several exhibitors of pigeons, making an attractive show at one end of the hall—Pouters, and Tumblers being most prominent.

The show was remarkable in all classes for the great excellence of the stock exhibited. The \$25 cup was awarded to A. M. Halsted, and the \$15 cup to C. O. Pool; the former for the best and largest collection of poultry of different varieties, the latter for the best and largest collection of different varieties of fowls.

We know it is exceedingly difficult, if not impossible, to conduct such an exhibition, so that no one can, with any show of justice, find fault with its management, and it is with no carping or fault-finding disposition that we make note of some things which ought to be avoided at future exhibitions.—For instance: In the first prize Brahma coop, the cock had but one eye, a disqualification for competing at all. The first prize Aylesbury duck had black streaks upon her bill, which, according to Tegetmeier, the authority relied upon by the society, is also a disqualification. This award is the more noticeable, as the beautiful pair of Mr. Haines had no such blemish, and were otherwise apparently as fine. We do not ourselves believe that the judges were knowingly biased in their judgment, but the facts stated, with many others we might name, were the subjects of comment among the visitors to the show.

A Treatise on the Mule.—The superintendent of the government Corral, at Washington, Mr. Harvey Riley, has given to the public, through Dick & Fitzgerald, publishers, a practical treatise on the mule, of really solid value. It is a work of 107 duodecimo pages, illustrated by 14 lifelike engravings, from photographs of all portraits of army mule men, for either good or bad qualities. We have only space to give the book a very hearty welcome. The earnestness of the writer, his familiarity with his subject, his excellent common sense, and his clear way of putting home truths, lead one to overlook a lack of system in treating his subject, which is really of no disadvantage to the reader, who will be the more inclined to read the book through; if one is really interested in the subject, he can hardly help doing so. The book should be in the hands of every mule owner or driver who can read.

Wallace's American Stud-book.—Volume I of this work has appeared. Published by W. A. Townsend & Adams, New York, 1897, containing 1017 large octavo pages, and embellished with seventeen well executed steel engravings of famous American horses, both thoroughbreds and trotters. The work gives evidence of very thorough, conscientious labor, and honesty of purpose. Twenty-four pages only are devoted to preface and introduction, the remainder being: 1st, the stud-book proper, giving pedigrees of horses, from "No. 1, Abellino, gr.," to "No. 2821, Zohrah, b.," and, (we estimate), 2480 mares, regarded as thoroughbred; 2nd, an appendix of "pedigrees not extended," containing some 3600 names; and, 3rd, a trotting supplement, containing the names, pedigrees, and occasionally bits of history, breeders' and owners' names, of some 900 of our famous trotting animals and of young horses coming of stock of high repute on both sides. The work is very valuable to horse breeders, and of interest to all owners of thoroughbreds or fast trotters. Sent by mail for \$10.

Another Horse Book.—"Horse Portraits," by Joseph Caird Simpson, 453 pages, 12mo., published by W. A. Townsend & Adams, New York, 1898. This is a gossiping book, containing a great deal of valuable information about the breeding, rearing, and training of trotting horses, their management in the stable, on the track, and in preparation for trials of speed, thoroughly diluted and diffused through ever so much "horse talk," anecdotes of horses and horsemen, etc. The author selected for his book the most tiresome of all styles, to us, that of the rhetorical and high-flown dialogue, as if the whole book consisted of 1-minute to 15-minute speeches, alternately pronounced by "Preceptor" and "Pupil" in the most absurd and unnatural way. The absurdness is not less marked when we find "Pupil" sagely instructing "Preceptor" in some of the simplest matters of horse-

manship. There is, as we have said, good in the book,—how much, it is hard to tell, for the "Contents" runs over eight pages in fine type, and there is no alphabetical index of subjects. It is pleasant reading, and when anything that may be of future use is found, the reader should be sure to make a note of it.

Half Buffalo Beef.—After the article on crossing the buffalo with our common cows, on page 13, was in type, we learned with no little regret that the cow had been sold for slaughter. Just as we are closing the paper for this month, we are able to add our opinion of the quality of the beef, having dined with Mr. Swain at one of our best restaurants, where the carcass had been purchased. The animal had been dry but one month, and though in fair condition to begin with, surprised every one with the amount of fat laid on in so short a time; yet she was far from fat. The beef was moderately marbled, of a bright red color, and the fat had a golden hue. We eat roast beef from the fore quarter, rib pieces, and tenderloin steaks, and found it equal to the best beef we have ever eaten, if not superior. We regret all the more that this fine young animal could not have been kept to become the mother of many heaves or heifers like the one Mr. S. still possesses, in order that the peculiarities of her race as milkers and beef makers might be the better determined. Circumstances made it impossible for Mr. Swain to keep her, and he had offered her to any one who would breed from her, at a very low price.

Sale of Imported Stock.—The first sale at the Clifton stud farm, Staten Island, occurred Nov. 19th. The stock was recently imported by R. W. Cameron, Esq., and consisted of Short-horns, Devons, Alderneys, and racing horses. Most of the cattle sold at only moderate prices. The best two Alderney heifers, to calve in the spring, brought \$395 and \$350; the best two Short-horns, \$400 and \$410. Two Guernsey cows brought \$310 and \$235. The horses, mostly under two years of age, though of excellent pedigree, did not secure satisfactory bids, and were withdrawn, with few exceptions. \$2,000 has come to be thought a small price for a racing colt of good promise.

Manure Pit.—"X" asks: "What kind of cement must I use to make a liquid manure pit, when it would freeze?" Good water lime, (hydraulic cement,) commonly called "cement," will usually set in a few months, so as to be frost-proof and water-tight.

Spent Tan Bark.—This article, so often used for road making, or thrown into the river to get rid of it, may be economically used in several ways. It makes good bedding for horses and cattle, and keeps the stable sweet. When saturated with urine, it should be thrown into the compost heap with the other manure. It may be used to good advantage in styres or privies, or wherever absorbents are needed. It is good to mix with heavy clay soils for the purpose of making them lighter. It is serviceable in a compost heap to mix with fresh stable manure. If thoroughly dried, it makes a slow fire, of use in mild weather to temper the heat of wood.

Roofing.—"Would a board or shingle roof be any better if it should be painted with gas tar, and then sanded?" Ordinarily not. A board roof would probably last longer. If the tar be applied when the boards or shingles are laid, and all parts exposed to the weather or not, except the under sides, painted over with hot coal tar, as the work proceeds, and, finally, fine sand thrown over the whole, a very durable roof will be the result. Water from such a roof will taste of coal tar for a long time.

A Workshop.—A farmer is "accomplished," if, in addition to sufficient knowledge of farming to be successful, he has enough of one or two good trades, so that he can turn his hand to them, and do fair sort of work as his needs require. Most farmers must do some carpentering, and all ought to be handy with joiners' tools. The ability to use an awl and waxed end in patching harness comes often in play, and when a man can do a neat bit of soldering, when in worse luck, he will find his soldering iron and accomplishments among the most essential articles of his shop furniture. Every farm should have a good workshop, with all the tools in it that the farmer has occasion to use, if he can use them well; keep them constantly in order for immediate use.

Clipping Horses.—"D. W. T." This is an old custom in England, and is getting to be quite common among horsemen in our cities. We have never heard a good argument in its favor. At this season of the year it is quite dangerous, as the shaved horse requires the closest watching to keep him from taking cold. Nature provides a thick coating of hair for the protection of the horse, and with this he is none too well guarded against the extremes of our severe and changeable climate.

Steamed Bones.—"D. W. P." Rhode Island.—If you have steamed bones mixed, as you say, with half their weight of sandy loam, they will decay considerably in the course of a year, and we would leave them as long as that, working them over, and adding more loam twice in the mean time. At the final working over of the heap, rake or fork out the coarse bones, and mash the rest. It will make an excellent manure for potatoes, corn, small grains, or grass; also excellent for the garden, and for fruit trees. You may apply it at the rate of one ton of bones to the acre, though much less, down to 100 or 200 pounds, will be productive of marked results.

Value of Road Wash.—"C. T." Turn all of this article you can upon your meadows and pastures. The increased yield of grass will show its value. There is some manure mixed with it, and a part of its effect is probably due to its fineness, occasioned by the continual tramping of iron shod feet and the grinding of wheels. Where this wash collects in hollows by the road side, it will pay to cart it into the yard or stables for an absorbent, or to spread it broadcast upon the meadows.

The Early Rose Potato.—This is a seedling of the Garnet Chili, but unlike its parent in color and quality. Mr. Heffron of Ulster, its introducer, informs us that it is more productive than the Early Goodrich, and ten days earlier. It is a very fair and handsome potato, and of most excellent quality. We were present at the trial of some fifteen varieties by a committee of the Penn. Hort. Society, and considered this the best of all. Mr. H. has disposed of his stock to B. K. Bliss & Son.

H. W. Beecher's Farm, near Peckskill, has 33 acres. The sales amounted to about \$3,700, in 1866, and to about \$4,000, in 1867. Six laborers are employed upon the place, which is one of the secrets of its productiveness. Is it not about time to discard the plan of working a 200 acre farm with one hired man?

The Horse Crop.—The value of cattle, sheep, and swine, in Illinois, is about twenty-six millions of dollars; that of horses is thirty-two millions. Similar statistics come from other States, showing the increased attention paid to this animal upon the farm.

Mule Teams vs. Horses.—The popularity of mule teams in our cities and on southern plantations is well known, and has an economical basis. It is claimed by those who have large experience with both kinds of teams, that the mule can be safely worked at an earlier age, and more hours in the day, that it will keep in good condition on coarser and cheaper fare, and bear neglect much better, and that it is a serviceable animal for at least three times as long. We know of no reason why they should not be more used upon northern farms.

Peat Questions.—A. B. T. We do not hear much now about the manufacture of peat for fuel. When coal was twelve dollars a ton, it was a matter of great importance to find a substitute. With coal at four or five dollars a ton, it is the cheapest fuel in market, and the peat bogs will have to wait for another generation to burn them. Some of the peat machines are still running, we believe, but the business is not lively. There is no speculative call for peat lands, and those who own them need not be afraid to use or sell them to make compost. This will probably be their best use for some generations.

Collar and Harness for Oxen.—J. B. recommends this instead of the yoke. "They work with more ease, carry their heads higher, and look better. I have worked oxen in harness, in pairs to the plow, with single line, and found them as tractable as horses. Why should progressive America follow the barbarous yoke longer?" The barbarity of the yoke is not very clear.

Improvement of Reclaimed Salt Marshes.—G. Smith, Harwich, Mass. The principal use of flowing, the present winter, would be to take the salt out of the surface, but if the sea water be shut off, the surface will be ready for grass seed, by the last of March. As to the kind of crops for such lands, we think grass will pay better than anything else, at least for the first ten years. The marsh sod is exceedingly tough, and it would take years to rot it. For grass you need no plowing. Sow immediately upon the sod, the last of March, a mixture of seed, say two pounds white clover, six pounds of red clover, and six quarts of Timothy, to the acre. Surface drainage should be attended to, and for this purpose we have found narrow drains, eight inches wide and two feet deep, about four rods apart, and running at right angles to the creek that traverses the marsh, to be effectual. A complete system of tile drainage would be better, but it involves a large outlay. The narrow surface drains are cheaply made, and the mowing machine, rake, and cart, can be readily run parallel with them. The

tile draining can be introduced later, if it is found to be desirable. We have used several kinds of top dressing, and found them all good and paying for the use. Coarse gravel, spread half an inch thick, and the coarse stones raked off, made a decided increase in the yield of hay. Garden soil and surface loam did much better. Stable manure was better yet. Mud from salt water ditches composed principally of decayed seaweed and other marine vegetation, had about the same effect as stable manure. As this is generally accessible near reclaimed marshes, it will probably be the most economical application after the first three seasons are past. It should lie upon the banks of the ditch, or in heaps elsewhere, a few months before it is spread. The salt grasses will not disappear wholly for several years, but will improve in quality. Keep sowing the grass seed until it gains full possession. A marsh from which we shut off the tide water in the fall of 1855, is still in good condition, and the first tide gate still remains. These reclaimed marshes are the best grass lands in the country, and we are glad to see the efforts to improve them.

Artificial Incubator.—Leach & Higgins, of Mass., exhibited one of these articles at the recent Poultry Show. It is in the shape of a box about three feet long, by two feet broad, and two feet high, divided into several stories, for the accommodation of the eggs and the newly hatched chickens. The heating apparatus is a lamp outside, communicating with pipes that traverse the interior. The heat is kept from 89 to 105 degrees (Fahrenheit) for hatching, and for nursing the chickens. Good fresh eggs hatch in 23 days, and come out strong and healthy. The expense of oil for the lamp is about four cents a day. Seventeen dozen eggs may be hatched in it at once. It is claimed for this chicken factory that it is surer than the mother hen, that it guards perfectly against the enemies to which chicken life is exposed, and makes poultry raising a uniform success. The machine looks as if all this might be true, but we have to remember that all former attempts at artificial incubators have been, practically, failures. If half they claim is true, the patentees have a valuable invention. The price, \$300, it strikes us, is out of all proportion to the cost of the article, and in this respect the patentees stand in their own light, for the principle cannot be patented, and they will find imitators. It is to be taken into consideration that the hatching of chickens, especially out of the usual season, is but a small part of the cost of raising them. They must have artificial heat and protection for several months after they leave the incubator. What shall we do with the chickens, after they are hatched, is a question that would bother most people more than the hatching.

Coarse or Fine Feed.—F. Smith. That depends somewhat upon the animal fed. Fowls have a powerful grinding apparatus, and need something to keep it busy. Sheep are said to do quite as well on whole grain as on that which is ground. All the bovine race, horses, and mules, especially when worked, thrive better on cut feed and meal. Careful experiments show that swine fatten much more rapidly on ground and cooked food.

Liming and Plowing Land in Fall or Spring.—F. Smith. Good usage differs, and we suppose either depends somewhat upon the circumstances of the farmer. It is desirable to keep the lime as near the surface as possible, and those who spread their lime upon the sod in August, and plow the following spring, claim that the lime is brought up with the inverted sod, and they have the additional advantage of a much heavier sod made by the spread lime, which stimulates the growth of the grass. Those who plow clay loams in fall, claim that the frosts are a great advantage, that insects are destroyed, and that spring work is put forward. We prefer spreading lime upon sod, and plowing the following spring, just before the crop is planted. See articles on Liming and Rotation, Vol. 26, pp. 283 and 288.

Compost from Dead Animals.—J. E. Our correspondent from Indiana takes exception to this kind of compost, which we have so often recommended, on account of the disgust of handling it. He says, among many other things, quite as little to the point: "My plan is to bury any dead animal as quickly as possible, and not leave it above ground for a nuisance to myself and the whole neighborhood, to breed a pestilence, endangering the lives of the human family. It is difficult in this country to get even common barn-yard manure hauled out, leaving dead horses and dogs out of the account. I did last fall accidentally manage to get a hand to help me haul out my barn-yard manure which had been accumulating for eight years, and we had a good crop of wheat after it. But had this been of your kind of manure, there would have been an exodus from the farm of every living soul on it."—Our plan agrees with our correspondent's in burying the dead animal; only we would put the carcass

into a innick heap, where it will be of use, rather than in the ground, where it will rot. It is not necessary, as he supposes, to cut up a dead animal. The only advantage in this is to hasten decomposition, and to make the compost available earlier. If you use manure or peat enough, there is no more odor from a decomposing dead body in a heap than in the ground. The manure absorbs the gas as fast as it escapes, and will absorb the whole of it, if it lies long enough. The advantage of forking over is that it hastens the decomposition, and more thoroughly mixes the flesh with the peat or manure. The mass becomes finer and is sooner fit for use. If a man has a very delicate stomach, we should not recommend him to fork over the heap six weeks after it was made, especially on a July afternoon. But if it has lain a year, very little, if any, flesh remains, and the mass has not much more odor than stable manure. We have made many hundreds of loads in this way, and have never found any difficulty in working among it ourselves, or in getting others to do so. The crops are so green and luxuriant upon this compost, is green, and the harvests are so satisfactory, that we rather like the smell of ammonia, and shall run opposition lines to the crows, in speaking for old horses in the season. We are sorry that our correspondent puts us down among the kid glove gentry. We affect cowhide boots and buckskin mittens, and greatly prefer the odors of the compost heap to the most delicate perfume of Lubin. If one has too big a nose, he should leave the farm.

Farming in Florida.—The papers report that "Mrs. H. B. Stowe has a farm of 400 acres, at Mandarin, on the St. John's River, about fifteen miles from Jacksonville. It is about five miles of river front, and a sweet orange grove of one hundred bearing trees, with an annual production of 60,000 oranges, and many smaller trees. The annual crop of oranges is said to be worth \$1800." There is plenty of the raw material for just such farms in that State. Oranges and other tropical fruits grow with great luxuriance, and the climate is healthful as well as pleasant. For Mrs. Stowe such a piece of property is a matter of luxury. For others it might be a safe money venture, or furnish business and a home for life.

Editorial Jottings in Europe.

[Mr. Judd has arrived safely home, after an interesting, instructive, and very successful tour of over six months in different parts of Europe, having traveled more than 19,000 miles, with part of his family, including children of 8, 11, and 15 years, and not having experienced an hour's delay by sickness or storm; no railroad train fell behind time or failed to connect, and not an item of luggage went astray. This certainly speaks well for the management of European railways. After a few days' rest and arrangement of delayed business matters, he will resume his former labors, and devote his chief attention to the *Agriculturist*. We have on hand some of his letters, extracts from which will doubtless interest our readers. We give now, out of order, his latest letter, as it refers to Mount Vesuvius, whose present active eruption renders it an object of immediate interest.—ASSOCIATE EDITORS.]

... NAPLES, Nov. 4th, 1867. ... We had some difficulty in getting here from Rome. Garibaldi's troops, whose encampment lay in sight of Rome all the while we were in the city, had interrupted the railway train which would have brought us here direct, (163 miles) in eight hours. So we went north-west 45 miles to Civita Vecchia, (pronounced *Chiv-e-lah-vel-ka-ah*) where we found the harbor all alive with boats landing the French troops, and we were detained about a day. A French steamer brought us hither in 16 hours, or two days from Rome.

... "I wonder not at the great interest every traveler feels in Naples and vicinity, and I wish our few days' stay could be as many weeks. A volume would not suffice to describe what we have already seen. ... Naples is the largest city of Italy, and contains about half a million inhabitants. It is on the north-north-east side of the wide Bay of Naples, which sets up from the Mediterranean Sea inland 25 to 30 miles. Mount Vesuvius is 3 to 3½ miles inland from the head of the Bay, or about 7 miles south-east of Naples. Going around the Bay from Naples 3½ miles, you come to Herculaneum, which is covered 25 to 40 feet deep with lava which ran down the mountain, burying the city in its course. On the soil above Herculaneum now stands the large town or city of Tiesina, literally a city upon a city. Starting eastward from near this point, you ride up the inclined hill-side, over the old lava current, the surface of which has become in part a cultivated soil, mainly planted with vines, and three miles from the bay, at an elevation of 2000 feet, you reach the steep mountain, which at a distance looks like a cone rising above an elevated plain. Leaving the mules here, one clambers about 2000 feet up the almost perpendicular sides, over loose lava stones. The top which looks flat at a little distance, is a hollow basin, one quarter to one

half mile in circumference. The lava or melted stone appears to have boiled over on all sides, and then, in cooling, to have sunk down a few yards, leaving a basin on the top of the mountain. This basin is covered with scoria or loose black lava, and lighter colored ashes. There are some fissures in the bottom of the basin, from which sulphurous fumes arise, but the mountain has been nearly quiet for half a dozen years. [See below.]

"...Coming back down to Herculaneum, or Resina, you go on south along the head of the Bay, and then south-east, crossing several elevations, which are formed by the immense streams of lava that at various periods have flowed down the sides of Vesuvius in different directions. Nine or ten miles from Naples, that is, around on the south side of Vesuvius, you come to the partly excavated city of Pompei, (pronounced here Pom-pay-ye.) This was upon a south-east arm of the Bay, which has been partly filled up by lava, throwing the site of the city inland half a mile or more. Pompei was destroyed or buried in the year 79 A. D., or nearly 1800 years ago. The lava that boils out of the top of Vesuvius, usually runs slowly down the mountain side, giving the inhabitants time to escape. People seem to have little fear of actual danger, for the whole country all around the foot of Vesuvius, and partly up its slopes, is very thickly inhabited—indeed there are in this vicinity more inhabitants to the square mile than in any other country place in the world, I believe. It appears that the people of Pompei were scared out of the city by a lava stream which did not reach the walls, but that 400 or 500 remained, or returned, when an immense mass of lava was hurled from Vesuvius, and fell in a thick cloud of ashes and rapilli or fragments of pumice stone, filling up the streets and houses, and covering the whole to a depth of 45 or 50 feet. The top, by the action of the elements, was formed into an arable soil, and afterwards cultivated, the city itself being buried, and lost sight of for more than a thousand years! During the past 350 years, and especially in the past 40 years, the government has been uncovering parts of Pompei, and removing the ashes and rapilli from the houses and streets, which have been preserved almost entire. The roofs of the buildings were mostly crushed down, but the outside walls are almost all standing. The streets, with the paving stones deeply worn in ruts by the wagon wheels, are as perfect as if left but yesterday. You see the plastered walls of the rooms, with fresco paintings nearly perfect, and the floors are generally in beautiful mosaic, well preserved. Houses, shops, temples, public buildings, many of them still retaining the finest carved marble pillars, statuary, etc., fill up the excavated portion of the city. All kinds of implements, for the household, for the mechanic arts, etc., are preserved just as they were in use eighteen centuries ago! Many thousands of these are collected in the Museum at Naples, and after examining them, and seeing how much they are like those of the present day, one feels the force of Solomon's remark that "there is nothing new under the sun."...

We spent four hours, until thoroughly wearied out, in walking through the streets, and examining the buildings, and yet visited but a small part of the uncovered portions, while about two-thirds of the ancient city is still buried, as is shown by the outer wall, nearly 1½ miles in length, which has been traced out, and by the experimental diggings in the inclosed soil.

"...Herculaneum is buried so deeply, and the modern houses are so numerous above, that only a few of the buried structures have been cleaned out. We walked through the great amphitheatre, large enough for the population of an extensive city. It is 25 to 40 feet below the streets of the present village, and was discovered in sinking a well.

"...The ride westward from Naples along the north side of the Bay, is intensely interesting. We first pass through the mountain ridge by a tunneled road, (Gratto of Posillipo), half a mile long, 30 to 75 feet high, and 25 to 30 feet broad. It was cut out of the solid rock, long before the Christian era, probably. Virgil's tomb is near the entrance of this. Beyond the grotto, three or four miles, we went to the naturally heated sulphur caverns and baths, and to the Dog Grotto—where a dog at our feet fell down suffocated by the carbonic acid, which did not rise to our own heads. We next visited Pozzuoli. This was the ancient Puteoli, where St. Paul landed after his shipwreck, (Acts xxviii, 13.) The old "Appian Way," still partly visible, is here seen; it extended northward 120 miles or so to Rome. Just east of Pozzuoli, we went into the crater of Solfatare. This is a flat bottom, round basin, 30 acres or so in extent, the rim 20 to 30 feet high, and the bottom covered with white volcanic salts, sulphur, alum, and chalky ashes. In treading over it, it sounds hollow, as if you were stamping upon the head of an immense brass drum. At one point, steam and sulphurous fumes belch forth with a sound like a great blast furnace. We cooked some eggs in the mouth of the fissure, and the air around was so filled with sulphur that the silver collars in our pockets were blackened in a few minutes. ...The eruption of Solfatare, in 1199, buried part of Poz-

zuoli, including the great amphitheatre where Nero acted as a gladiator, the uncovered ruin of which we visited. The ruined temples of Jupiter Serapis, Neptune, and the Nymphs, the hot springs, etc., are interesting objects. Northwest of Pozzuoli is the Monte Nuovo, a conical mountain heaved up in 1538. Beyond this is the Lake Avernus and the Sybil's Cave, of Virgil. Further north-west, over on the shore of the Mediterranean, are the ruins of the ancient Cumæ, buried by one of the many volcanoes which have disturbed all the region around Naples. The immense gateways and other structures, partly exhumed and uncovered, show the greatness of the lost seaport city. We rode two miles or so right over the buried dwellings of this once populous town. Turning southward, we went to the point of land formed by the Bay of Naples and the Mediterranean. Here are the ruins of Baia, with its partly uncovered temples and other buildings; the harbor of Misenum, where the ancient Roman fleet was moored; the vast reservoir, (Piscina Mirabilis) which contained fresh water, brought by the Julian Aqueduct a distance of 40 miles, to supply the ships; the 365 baths on the shore of the Bay of Baia; many ruins of ancient Roman villas, etc. This region was the fashionable resort of the Romans, especially in summer. The volcanic nature of the whole surface, and the many classic associations with Roman history, render all this region one of most intense interest.

"...OF NAPLES I have not time to write, and the country around is far more interesting than the city itself. It encircles the north-north-east shore of the Bay; has one wide beautiful street, the Toledo, and others of moderate pretensions, but they are usually very narrow, like those in most ancient eastern cities. Its southeastern portion is nearly level, but the north and north-western portions run up upon hills, with some of the streets very steep. Melons or asces are very numerous, and most of the country produce is brought in upon their backs. There are few fine public buildings—the Museum filled with relics from Pompei, Cumæ, and other ancient cities is very interesting. The people are largely engaged in coral fishing on the coast of Africa, and in the manufacture of this article into ornaments. Wine, brought in from the surrounding country in casks upon the backs of asces, is a large article of trade.

Nor. 6th, Evening.—We are on board a steamer waiting our passage to Marseilles in France. Mount Vesuvius has attracted much attention all this day. We were walking upon its peaceful sides on Saturday last, and gathered specimens of lava. But after five years of slumber, it this very morning commenced sending up heavy volumes of vapor, which old residents say is a prelude to an eruption of lava. I wish we could wait to see what will happen, but our arrangements are all made for the home voyage of 5500 miles, and we cannot stop. If the expected eruption takes place, you will from the above description be able to imagine its appearance. In some of the former eruptions the lava has broken forth from the sides at different points, the marks of which remain in the form of lava hills with the cooled solidified streams extending down the mountain sides, one-eighth to one-fourth mile wide and twenty to one hundred feet deep. The favorite "spouting" place, however, is in the center of the summit. The melted stone boils up and runs down the sides in one or more streams, sometimes cooling before it reaches the bottom, and at others flowing down to the foot, and into the Bay when flowing westward, burying houses and villages that lie in its course. At frequent intervals during the overflows immense masses of melted matter and flames belch forth and shoot high into the air where the lava is cooled in light porous form, and driven by the winds falls in showers of ashes and rapilli, often two or three miles distant from the summit, as when Pompei was buried. I omitted to say that Vesuvius has a twin mountain peak, just east of and partly joined to it, called Mount Somma. This was an ancient volcano doubtless, but has been quiet, I believe, during the period embraced in modern history....

[By telegraph, and by the recent newspapers, we learn that the activity of Vesuvius, referred to in Mr. Judd's letter, proved to be a real eruption. The melted lava has for several days flowed down the mountain sides in six or seven different streams. We have not heard of any extensive damage done to the neighboring cities as yet.—Eds.]

Brail Farming.

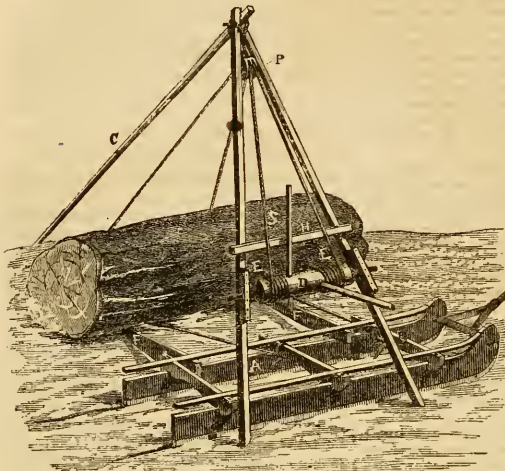
It is to be lamented that so much of our farming is mainly a matter of misale. The routine farmer uses about as little mind in the cultivation of his fields as the ox that he drives. His team always goes in the ruts made by his fathers. He has no well-devised system embracing many years of improvement for his farm. His object seems to be to get through the year as

easily as possible, and get a subsistence from the soil. Now we want something better than this, and are beginning to have it. So much more productive is brain than muscle, in manipulating the soil, that we know of instances of first-rate farming by men who never put hand to the plow. It is undoubtedly more satisfactory to a man to give his whole attention to husbandry, and ordinarily this is the law of success. But so great is the need of more capital and more mind in this business, that we welcome from any quarter the men who can show us how to make farming profitable. The best cultivators that we have found in the country are men bred to other pursuits; professional men, mechanics, merchants, and bankers, diverted temporarily from their chosen pursuits to husbandry, or adding this to their other business. We have seen so many cases of eminent success in this kind of farming, that we think favorably of it, and do not hesitate to recommend it to any man who has capital and a taste for husbandry.

Men of this class generally have abundant capital, and are not afraid to invest it in this business. They bring the mental discipline and tact of the town on to the farm, and work with as much faith in the field as they once did in the shop or the counting-room. Their skill, trained in other schools, tells in the field. The shoemaker turns his attention from taps to tap roots, and turns out such crops of beets, carrots, and turnips, as are the envy of the neighborhood. The lawyer pleads his case with the soil, and wins such verdicts as he never obtained from juries. The physician medicates the barren field, and infuses into it such health and productiveness that all the old fogies wonder what sort of manure the doctor uses. The minister tills his glebe with so much skill that he brings both the butcher and grocer in debt to him at the close of the year. The banker runs a farm as skillfully as a bank, and makes it pay surer dividends.

It is not necessary that a man should live upon his farm, in order to make it pay. It is desirable that it should be near his residence, that he should see it every week, and lay out the work for the foreman. But very good farming is done even without this, if a man will give his attention to it. Washington planned his farm crops and rotations with his campaigns in the fields of war, during the dark years of the Revolution. Webster, at Washington, dictated the plan, and most of the details of his farming, at Marshfield, and that was certainly quite respectable. Professional men in villages and cities often have farms in the suburbs that they cultivate with great satisfaction and profit. Sometimes the foreman is a partner in the business, and takes the farm at halves, furnishing half the stock, tools, seed, etc., and taking half the crops. But this does not always work well. If the land-owner has liberal notions of improvement, it works quite ill; for he looks to the permanent benefit of his place, while the foreman very naturally looks for large receipts at the close of the year. The best method is for the landholder to hire a competent foreman with a family, on a salary, and if he wishes still further to stimulate his endeavors, give him a small share in the profits of the business. It should be stipulated that he should board what laborers are needed, at a given price, so that the crops may not suffer for want of working at the critical time. This will save all disputes about the application of manures, rotation, sale of crops, and other details. With a good foreman capable of directing labor, a man of capital in the village or city can carry on a farm, and make

it pay. But he will not find it a sinecure. If his time is already fully occupied, or if he is averse to the business, he should not attempt it. But if he has a taste in that direction, and is willing to plan, and labor with his brain, he can find a great deal of pleasure and sure profits in cultivating the soil. The amount of the dividends will depend a good deal upon the skill of the operator, the seasons, the facilities for marketing, and the contingencies which affect all other industries. Farms located near cities and villages usually rise in value, and this consideration often determines capitalists to these enterprises.



DEVICE FOR LOADING HEAVY LOGS.

Loading Heavy Logs.

In response, we suppose, to our suggestion made not long since, we have from Mr. Wm. Londen, Jefferson Co., Iowa, a description of a way of rolling heavy logs upon a sled by hand, which he has found useful. Items and hints of this kind, especially if accompanied by sketches, are always very welcome. Mr. Londen writes:

"In return for hints, I send a sketch of an apparatus which I used the past season for loading logs upon sleds. It consists of a supporting frame [properly a "gin."—Ed.] composed of three poles, A, B, C.—A and B are ten feet long, and may be made of 3 by 4-inch scantlings; the pole, C, is 16 feet long. The windlass, D, is 3 feet long and 7 inches in diameter, and has a 1-inch iron pin 11 inches long, driven into each end about 8 inches. The ends of the windlass are made conical, and it is fastened upon the frame by two pieces of wood, 3 inches square, and 2 feet long, spiked or bolted to the scantlings, A and B, about 4 feet from the ground, as shown in the sketch. Two 2-inch holes at right angles with each other are bored through the windlass, into which the handspikes, S, work loosely. A rope, E, is passed around two little pins in the windlass, placed so as to prevent the rope from winding over the holes for the handspikes. The ends of the rope are passed through two pulleys, P, then over, around, and under the log, thence back to the sled, to which they are fastened, one to each end. By turning the windlass with the handspikes, the log is rolled up the skids on to the sled. The skids, P, are made with a notch, so as to carry the logs clear of the fender. A log can be loaded as quickly by this arrangement as by horses, and it can be worked in many

places where horses could not. Then there is no danger in using it, for if anything should break or slip, the operator is not in the way. If a knot on the log prevents its rolling, one of the levers resting against the cross-piece H, will hold the log while the obstruction is removed."

Shall We Keep Up Our Flocks?

We regret the tone of despondency which pervades so many of our exchanges in regard to wool growing. Wool is down, notwithstanding the protective tariff, and it is very natural for men who have been receiving sixty cents a pound to look upon forty cents as poor pay. Some are reducing their flocks, and others are selling out entirely. A few, and we think they are the wise ones, are taking advantage of the low price of sheep to increase their flocks, and be ready for the rise which they think is sure to come. The temporary depression in the wool market should not lead flock masters to abandon their plans, and change their stock; if favorably situated for sheep husbandry, they should hold on patiently, and wait for better times. We want to see this business put upon a permanent basis, and pursued as steadily as beef or pork making. The demand for its products, mutton

and wool, is quite as steady, and as likely to increase in the future. Nothing can be more certain than that this nation will continue to wear woolen garments, and to eat mutton, and in increasing proportion as the market is better supplied with these articles. It is not strange that these products are cheaper than they were last year. Wool and mutton vary no more in price than pork and butter. A variation of twenty or thirty per cent. in these articles in the course of a year is not uncommon. But farmers ought not on that account to give up the raising of butter and pork. If they keep on steadily with the industry their farms are adapted to, they will be ready for the rise when it comes, and make money. Almost every kind of business has its periods of depression, and there is no reason why sheep husbandry should not take its turn.

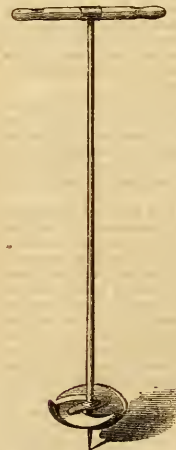
Wool, we think, has about touched bottom, and farmers may look for better prices another year. There were very large importations of wool and woolen goods during the war, and the year that followed, in anticipation of the high tariff that was called for. This immense importation still affects the market. Shoddy has also been very largely used in the manufacture of woolen goods, and the unfortunates who were once taken in with this article are in a temper to cry aloud for garments made of the last clip, fresh spun and wore. Pantalooners that do not last out half their days are not the article to make sheep look amiable in the eyes of the public. Shoddy, we trust, has had its day, and is bound to the compost heap, where old woolen garments should bring up. Another hindrance in the way of wool growing, the dogs, is likely to be removed very soon. Several of the States have efficient dog laws, and the sheep killing

cars are greatly reduced. All that is wanted now, is a steady policy on the part of flock masters, and concert of action, to secure a national dog tax, and to put wool growing on as firm a basis as it has in England. The introduction of the middle and long wool sheep has greatly increased the consumption of mutton among us, and these animals are so well appreciated that we shall have to raise them, if we get pay for their flesh only. Though the present price of mutton is low, it cannot be a very bad business to raise South Downs and Cotswolds, at the prices they bring. We say then to the flock masters who are planning for the future, do not be in haste to abandon sheep husbandry. The flocks are steadily enriching your pastures, and if you hold on steadily, they will enrich you.

CROPPING THE AFTERMATH.—It is claimed for this practice that all the manure made from the grass is returned to the field, and the old stubble is kept out of the way of the next year's mowing. In a recent conversation with a very successful farmer in Connecticut, he branded it as a ruinous practice. For twenty years or more he had kept all cattle from his meadows after they were mowed. The grass makes a thick covering for the roots in winter, so that they are not injured by the frost. It starts earlier in the spring, and even if the season happens to be dry, there is a fair crop of hay. The decaying old grass is a good mulch, and eventually a fertilizer. The hard cropped meadow in a dry season is generally a failure. He keeps up his fields to two tons of hay or more to the acre, and is satisfied with one crop. He top-dresses with muck compost and seaweed, and sells hay, though he keeps a dairy farm.

Post-Hole Borers.

We have inquiries about these implements by those who are anxious to relieve themselves of severe hand labor by the use of convenient tools, so far as possible. The implement is of the form we figure it,



POST-HOLE AUGER.

with the auger. The bit consists of two blades having flanges on the outer edges, and set spirally like the thread of a screw. This is no new invention, but has long been in use. Most agricultural stores keep these articles, but there has never been a very extensive sale for them.

Domestication and Crossing of the Buffalo.

It seems a matter of regret that after the probable, or to say the least, possible value of the buffalo and of the buffalo cross in agriculture had been demonstrated, as it long since was, there should have been no systematic efforts made for its extensive introduction, or general breeding and testing. The fact is, however, the value of the buffalo has never had sufficient demonstration, and they have been sufficiently domesticated in but a single instance, so far as we are aware, to enable any one to judge well of their excellences. Mr. Robert Wickliffe, of Lexington, Kentucky, some 40 years ago obtained from crossing a buffalo bull with common cows, several half-blood cows

and steers,—as we infer from his rather indefinite letter to Audubon, which constitutes the chief part of American literature on this subject. The cows he bred to common bulls, and to the buffalo bull, and after obtaining a fine three-quarter-buffalo bull, bred the cows of the herd chiefly to him for many years. The results of Mr. Wickliffe's experiments seem to be that the buffalo is capable of thorough domestication; that the half and quarter-blood steers and cows are larger than either parent; that they fat

readily, make excellent beef, are very hardy and longlived; that the oxen are admirably adapted to the yoke, having immense strength combined with great activity. He never tested the milk, and judged of the milking qualities of the cows only from the fact that when the cows and calves ran in the same pastures with common cows with their calves, the grade-buffalo calves were always the fattest. Audubon mentions that at the frontier forts, where buffalo calves were often brought in and reared, one calf was said to require the milk of two common cows. The inference drawn was that though she has a small udder, the buffalo cow must give a great deal of milk,—which, as we shall see, was probably incorrect.

It appears also that the domestic bull can not be used with the buffalo cow. Mr. Wickliffe supposes that the male half-breeds are infertile, which we doubt. The females, on the contrary, are fertile crossed with the bulls of either race.

The prevalent colors in this herd were dark, but occasionally white occurred, especially upon the head, and sometimes also striped or brindled animals, on which the dark color of the buffalo blended with a light dun, "like the stripes of a zebra." Here our knowledge of the buffalo

lad of fourteen to lead and handle her, and stands to be milked as well as any cow in the fine herd belonging to her owner. The hump is greatly reduced from that of a full-blood buffalo, as the reader will see by comparing this engraving with that on the first page of the

September number.

The face is disling, the eyebrows prominent, and the nose has a tendency to the Roman curve. The height of the spinal processes is such that the sides are what we would call in an ox "slab-sided;" still we think the ribs must spring out pretty well, and the flatness be due to the spine. The tail is peculiar, being longer than that of the buffalo, very tapering, and terminated by a pointed tuft. Mr. Swain has carefully tested the milk in comparison with that of his choicest Jerseys, and finds

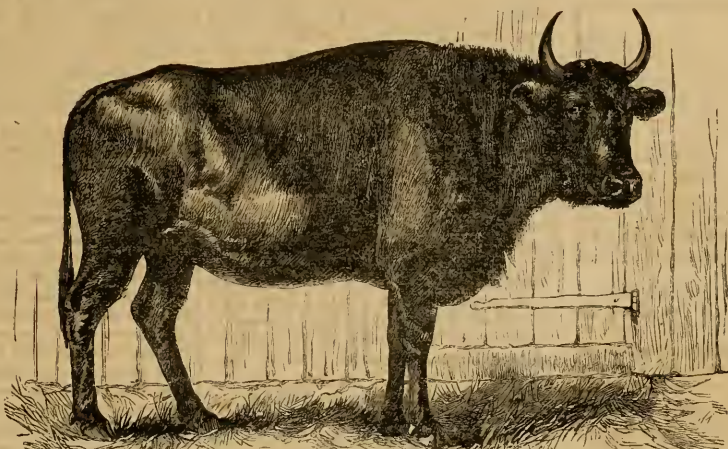


Fig. 1.—HALF-BUFFALO COW.

cross-breeds has rested for a quarter of a century, and we are the more happy to contribute a little to it which we think is new and important.

Mr. James P. Swain, of Bronxville, has had for some time in his possession a half-buffalo cow, (fig. 1), which is supposed to be now about five years old. She is of very large size, weighing 1,330 pounds, in medium flesh, massive in the fore quarters, light behind, heavy in the head and horns, but not coarse in any respect. The legs are long and bony, but move

that, though the quantity is small, (being probably about ten quarts per day when fresh), it is, however, astonishingly rich, yielding fully 27 per cent. of cream, while the best of the Jerseys only marked 25 per cent. A peculiarity of this cream is that, though perfectly distinct, it is almost colorless, that is, white, like the milk. The milk is much sweeter than that of common cows, contains little water, and when it curdles makes a remarkably tenacious curd, having not more than half the usual amount of whey.

These are exceedingly valuable facts, and suggest a problem which we hope will be thoroughly worked out, as it may easily be done by some of the gentlemen farmers of Westchester County:—What would be the result of a small admixture of this blood with our common cows, bred in for several generations?

Mr. Swain is a fancier of the dark Jerseys, and has several black ones. He sees so strong a resemblance between the Jerseys and a quarter-breed buffalo heifer, fig. 2, which he has, the calf of the half-breed cow by a common bull, that he asks: "Is it not possible that the striking peculiarities of the Jersey may be due to an admixture of buffalo blood a long time ago?" This might easily have occurred, for buffaloes were taken to Europe many years ago, and, besides, the Bison of Europe is a closely allied animal, and was once not rare as at present. The heifer, now about 20 months old, has lost the hump almost altogether. It has

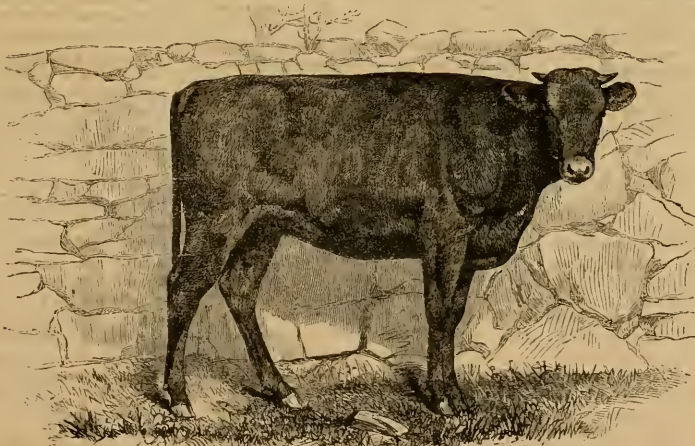


Fig. 2.—QUARTER-BREED HEIFER.

with great precision and grace, such as few cows have. She is of a dark brown or black walnut color, almost black, the coat being somewhat woolly. She is an exceedingly powerful animal, will leap over ordinary fences, and even stone walls, with the most nonchalant ease, and mill ponds and rapid streams present not the least impediment to her. She is, however, exceedingly domestic in her nature, will allow a

a delicate head, with the large, deer-like eye, and mealy muzzle of the Jersey. The legs are very delicate though long, and almost any one after seeing the black Jerseys would take this for another of them.

Walks and Talks on the Farm.—No. 49.

"You farmers," said a city friend, "ought to be making money, with butter at 40 cents a pound. But you grumble just the same."

"American farmers seldom grumble." Those who think so get the idea from books or from tradition. It is an English habit—not an American. There is a reason for the difference. The English farmer rents his land, and grumbles in order that the landlord may not think he is making too much money, and increase his rent. The American farmer owns his land, and if anything, is inclined to exaggerate its quality and productiveness."

"I thought they were always grumbling."

"I know you did, but it is a mistake. 'The city people are the grumblers.'"

"Have we no cause to complain of high prices?"

"Wheat is perhaps 25 cents a bushel too high, and barley 25 cents too low. Butter should be a few cents lower, and pork and mutton a few cents higher. At such prices, a farmer, if equally intelligent, might make almost as good a living as a grocer or a dry goods merchant."

"Farmers used to be glad to sell at half what they get now."

"True, but this only proves that 'times have changed.' Perhaps they got too little. They have worked hard, and done their full share in making the country what it is. They are going to do still greater things. They have now hold of the long end of the lever. They are bound to make this country the grandest and noblest that the sun ever shone upon. You are all very well in your way. We could not get along without you. But we propose to have some of you take a back seat, and make room for a few of our bright, active, young farmers. City people shall no longer sneer at country folks."

As I was leaving, he said something to the effect that city people did not sneer at the farmers. And in this he is right, so far as the well-bred, intelligent citizens are concerned, but the snobs speak of us with a superciliousness that is trying to the flesh.

But enough of this. Good farmers are now making money, and are well able to educate their children. They are doing so; and it is no disrespect to the fathers to say that their sons who stick to farming, will occupy a higher social position than has been accorded to us.

It does me good to talk to an educated young farmer. But deliver me from your ignorant, prejudiced, conceited, self-satisfied, swaggering biped—half farmer, half peddler, who thinks about nothing but his own shrewdness and his neighbor's follies. Such men ought not to annoy me, but they do. Unfortunately these meddling farmers have a notion that I came into the country to "show them how to farm," and though this is in no sense true, I encounter their bitterest opposition. This is no new thing. I was reading, the other day, in the *Museum Rusticum et Commerciale*, published in London in 1763, a letter from a farmer who had been trying JETHRO TULL's system of enriching the land by hoeing. He says: "By introducing the drill plow and the horse-doe, I could save a great deal of labor; and I may probably some time or other attempt it; but at the same time, I am sensible I shall find great difficulty in getting

men that will even try to do the work with those instruments. * * * If by dint of authority you oblige them to go out of their way, they will rather contribute to the loss of your crop, than not to endeavor to convince you that they are in the right." On this, the editor remarks in a foot note: "Our correspondent's reasonings on this head are very just. He seems to speak feelingly, and we are sorry to say that others lie under the difficulties he mentions. What chiefly prevents a reformation among our laborers in husbandry, is the *masters in general being but little more enlightened*." Not every agricultural editor would have pluck enough to utter such a truth in the first number of his paper.

I am offered \$12 a ton for all my wheat straw, to make paper. I do not like to sell straw, but I am satisfied that there is no way in which I can turn it into so much money. If we reckon the manure from a ton of straw worth \$3, I should still have to get \$9 a ton of *nutriment* out of the straw to make it pay. I do not think it is in the straw, and consequently it cannot be got out of it. If a farmer could sell his straw, and buy clover hay at something near the same price, he had better let the paper men have it.

I am more and more convinced that our chief aim should be to raise large crops of clover. The *Agriculturist*, last month, in "Hints about Work," says that the manure of "fattening hogs is very rich." This is true. It is far richer than sheep or cow manure from animals having nothing but straw or corn stalks. But if a cow, or a sheep, or a horse, is fed on clover hay, the manure from a ton of it is worth as much, if not more, than the hog manure made from a ton of corn, fed either whole or ground, raw or cooked. The idea that pig manure is so rich arises from the fact that our cow and sheep manure is usually so miserably poor. The question as to which is the richer manure, that from working animals or fattening animals, may be interesting to the physiologist, but has no sort of practical value to the farmer. If I have 30 tons of straw, 50 tons of corn stalks, 40 tons of hay, 2 tons of bean straw, 1000 bushels of corn, and 10 tons of oil-cake to feed out on the farm during the next six months, it will make no appreciable difference in the value of the manure to what kind or class of animals I feed it.

The only question I have to determine is in what way I can get the most money from the nutriment there is in the food. If we can get the most money by fattening sheep, or by keeping store sheep, or by fattening steers or farrow cows, or by feeding young stock, or from milk cows, or from wintering horses, we need not take into account the value of the manure. It will be approximately the same in either case. It will probably be the least valuable from the milk cows, and the most valuable from the store stock. But the difference is hardly worth considering, and it is a pity that scientific agricultural writers should so frequently allude to it. It only helps to keep alive the old notion that "horse manure," or "pig manure," or "sheep manure," or "cow manure," gets its value from the animal, and not from the food.

"How about hen manure?" The same principle holds. Its value is determined by the food. A bushel of corn fed to a turkey will give manure worth no more than a bushel of corn fed to a pig—provided the liquid and solids of the latter are all saved. As ordinarily managed, however, the liquid either runs away or soaks through the crevices of the planks into

the ground, and is lost. In the case of poultry, there is no liquid excrement to run away, and this is the reason why the droppings are considered so valuable. Poultry also eat a good deal of animal food in some form or another, and this, of course, adds to the value of the manure. It is a fact—and I wish every farmer fully comprehended it—that the value of manure from any animal depends *entirely on the food*.

There is one aspect of the manure question which encourages me very much—the wonderful effect that good manure has on our crops. I do not know whether to attribute this to the climate or to the soil. But I am much mistaken if the same amount of manure will do as much good in England as it will here.

We fed our hogs corn meal, and more or less oil-cake meal, (cooked,) all summer, and the neighbors evidently thought I was slightly deranged, if not more. Some said the pigs were so fat they would not grow; others, that the pork would cost me 25 cents a pound. Of course, none of us have made anything on pigs this season. The price of grain is out of all proportion to the price of pork. But I have done as well as my neighbors. In fact, I have done better, for I have lost less than they have. One of my neighbors has a dozen or fifteen pigs over a year old, and about the first of November he got out of pork, and bought one of the smallest of my late spring pigs. It weighed 145 pounds, after eating its breakfast, and dressed 121 pounds. He said he had not a hog that was fit to kill, even for fresh pork, and none, if killed, that would dress much more than half what this little chuck of a pig weighed. He was half Essex, and my neighbor said, when he came to pay me for him, that he "never saw or tasted fatter pork." I had another pig, half Suffolk and quarter Yorkshire, not fourteen months old, that dressed 423 pounds. He was the poorest pig in the litter, and did not do well for four or five months, or I should have sold him earlier.

The Deacon says there are a great many pigs, over a year old, that, at the present price of corn, will cost more to make them fat than they will bring when killed. In other words, their keep for over a year is wholly lost. Perhaps this is an exaggeration, but it is very certain that it has been an expensive business feeding their hogs the past autumn. I believe the system is all wrong.

Mr. J. H. Foster, Jr., of New Jersey, writes: "In one of your 'Walks and Talks,' in the *Agriculturist*, you say: 'A farmer can afford to pay one cent per pound for flesh as a manure.'"

"We can buy dried meat at 2 cents to 2½ cents per pound. I believe, it contains no more water than old wheat, if as much; *no grease*; sometimes as much, perhaps, as 5 per cent of bones—generally but little. It is considerable trouble to prepare it for feeding. I boil at one time, after it is chopped, (which is considerable work,) about 60 pounds. The chopping and boiling costs 40 cents. These 60 pounds furnish enough for five hogs for two days—all they will eat. They weigh about 250 pounds each. The cost of food, chopping and boiling, is 17½ cents per hog each day.

"How much ought the pigs to gain, and how much is the manure worth from 100 pounds of such food? Also, how much from 100 pounds of boiled corn meal? It costs me 20 per cent more to feed all they want of boiled corn meal or pudding."

I do not know, but I think one pound of this dried meat contains the substance of 4 lbs. of

flesh. If this be true, it is, when ready boiled, on a par with fresh meat at $\frac{3}{4}$ cent per pound.

I do not know what this "dried meat" is, but suppose it to be the refuse of some manufactory for making oil from fish or other animal matter. Now, the value of such an article for food would depend a good deal on how much oil there was left in it. If it contains "no grease" it will not fatten a pig rapidly, when fed alone. It would probably be more valuable for young, growing pigs, but in either case, some other food, such as corn meal, should be fed in conjunction with it.

The only experiments I can recollect that bear on the point are those made by Lawes & Gilbert. These experiments were made on 92 pigs, three and four pigs in each pen fed with different foods. Dried Newfoundland codfish was one of the foods used—not alone, but in conjunction with corn meal, barley meal and bran. When put up to fatten, the pigs weighed about 160 pounds each, and were, to the best of my recollection, nine or ten months old. They were fattened eight weeks. I cannot go into details. Those who wish for a further account of these interesting experiments will find it in the *Rural Annual* for 1865, pages 30-38. One pen of four pigs had about 2 pounds of codfish (boiled) each per day, and all the Indian corn meal they would eat.

The four pigs, in 8 weeks, eat 308 pounds of codfish, and 1,450 lbs. of corn meal, and gained 339 pounds. Or, in other words, each pig consumed on the average $9\frac{1}{2}$ pounds of codfish and 45 pounds of meal per week, and gained a little over 12 pounds. One hundred pounds of food produced a little over 22 pounds of pork.

In another experiment, where 2 pounds of a mixture of "bean and lentil meal," (say *pea* meal), were given each pig per day, and all the Indian corn meal they would eat was added, it took 100 pounds of the food to produce $21\frac{1}{2}$ pounds of pork. These experiments would seem to indicate, therefore, that dried codfish is not more fattening than peas.

This dried codfish contained about 40 per cent. of water, $18\frac{1}{2}$ per cent. of ash, $6\frac{1}{2}$ per cent. of nitrogen, and not quite 1 per cent. of fat. The beans and lentils contained about 5 per cent. of nitrogen, and about 2 per cent. of fat.

Assuming that Mr. Foster's meat has the same composition as the codfish, it is easy to give a rough estimate of the value of the manure obtained from pigs consuming it. Genuine Peruvian guano, all things considered, is the cheapest ammoniacal manure in market. It is worth, say \$90 per ton, and contains 15 per cent. of ammonia.

Assuming that one pound of nitrogen in the food will give us one pound of ammonia in the manure, (which is allowing for much more loss of nitrogen than is retained in the animal), 100 pounds of the meat fed to a pig would give $6\frac{1}{2}$ pounds of ammonia in the manure. The other constituents would be more abundant in the manure than in the guano; and we shall not be far wrong if we assume that the manure from 100 pounds of this meat is worth as much as 50 pounds of Peruvian guano—that is to say, \$2.25, or $2\frac{1}{4}$ cents per pound. The manure is worth as much as the first cost of the food.

In a postscript Mr. F. adds: "One of my neighbors *thinks* it would pay to use it as manure, but that hog feeding has not paid him. I tell him we had better pass it through the hog first. He seems to think it loses more than the value of the pork gained."

There *need* be no more loss than I have as-

sumed. But unless you have considerable litter, dried muck, leaves, or other absorbent, the probabilities are that a good deal of the manure runs to waste. If this loss is avoided, you have simply to determine how much the pigs gain, and the price of the pork; and, on the other hand, the cost of cooking and feeding, and the increased labor of drawing out the manure. It is doubtless in far better condition for the crops than if applied directly as a manure.

On the same basis, the manure from 100 lbs. of corn meal is worth about 70 cents.

Mutton, it seems, has been sold in New York by the carcass for 2 cents and $\frac{3}{4}$ cents per pound. If the sheep weighed 45 lbs., and the pelt is worth 75 cents, and the freight has been paid on them from Ohio or Michigan, how much did they net the farmer who raised them? One can see that the farmers could not receive much for them, or else the drivers must have lost money. Shall we never learn wisdom?

A farmer in this vicinity has just sold eight head of cattle for \$150 less than the same butcher offered for them last spring. He has lost the whole summer's feed and \$150 beside. Thus we go!

One thing is encouraging. Really good beef maintains a steady price. If we raise choice animals and feed them well, we can calculate on getting a fair price for them. Last week, "inferior" beef cattle fell a cent a pound in New York, being quoted at 7c. to 8c. dressed weight; while "extra" and "choice" held their own at 16c. to 17c. per pound. Such facts as these are eloquent advocates of good breeding and high feeding.

John Johnston talked of giving up farming. He was over eighty and had no son; help scarce and not trusty. "Had I not better sell?" he asked. I wrote him "No." Fancy John Johnston in a city! No underdrains, no growing crops of grass and clover, no wheat, no corn, no barley, no sheep! The last time I was there, when he went into the field his favorite cows came to be patted, and a splendid heifer calf put her nose into his arms. Shall he leave them? Those who say so know nothing of the pleasures of farming.

He now writes me: "The farm is not to be sold. I have let 40 acres for five years, for nursery purposes, at a yearly rent of \$1,000, payable semi-annually. This is a great deal better for me than selling. It would have been a great trial to have left my farm. I still have over 50 acres of cleared land, and you may be sure I will do my best with it. I have sold this year's crop of wheat for over \$1,500. I have 900 bushels of ears of corn from a trifle over eleven acres, and at least 70 tons of hay. I have bought 300 wether sheep and ten tons of oil-cake to feed to them. Won't I make manure this winter for my small farm?"

If I live, I will sow 12 acres of wheat next September. The same field yielded over \$100 worth of wheat per acre in 1866. It is all 'bush' about our land failing for wheat. The failure is all for want of feeding the land. Horses and oxen must be well fed if they are to pay in work. So must the earth if it is to pay for tilling."

Twenty-five dollars an acre (five per cent interest, or \$500 per acre) is not bad for land that was once pronounced "the poorest farm in all creation." So much for underdraining, good tillage, liberal feeding, and high manuring.

Mr. J. says he never had so poor a crop of

clover seed as this year—not quite a bushel per acre. Mr. Foster, who is an excellent farmer, only got 18 bushels from 38 acres. Mr. J. adds: "My first crop was far too heavy. It was so badly lodged that a great deal of it could not be cut close. I never had a good crop of seed when the first crop was not shaved off clean. Clover seed will be very high in the spring, if not before."

The drouth here still continues. Many farmers have to drive their cattle miles to water. It looks now (Dec. 2,) as though winter was about to set in without rain. But it is said such a thing was never known.

WHEAT CULTURE EXTENDING AT THE SOUTH.—One of the encouraging "signs of the times" is that wheat is reported to have been much more extensively sown at the South than ever before. This is undoubtedly true of some extensive sections. There is nothing more certain to entail poverty upon the soil than continual cropping with one plant—tobacco, cotton, or corn. The introduction of a variety of crops, with a judicious rotation and systematic manuring, will develop the full resources of the soil. In this way, we are confident that wheat will be found a better paying crop than either cotton or tobacco, alone.

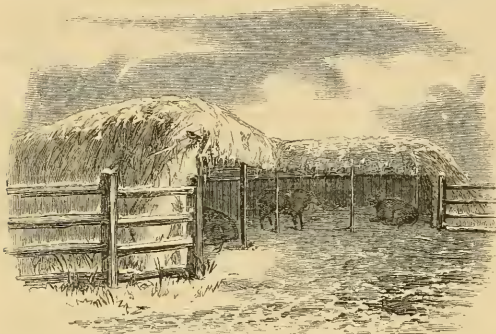
ASH BRNS.—More fires occur from ashes stored in wooden vessels than from almost any other cause. The favorite deposit is an old flour barrel under the shed or in the wood-house. The ashes stand perhaps in an iron vessel until they are supposed to be cool, and are then emptied. Coals, especially of the hard woods, hickory and oak, will retain their fire in ashes for a day or longer, and this, coming in contact with the barrel at a crack, kindles a flame, and a destructive fire ensues. Farm-houses and barns are frequently destroyed in this way. There are several devices for the storing of ashes. Where wood is wholly used in the fireplace, or Franklin fire grate, it is convenient to have a flue in the back part of the hearth or the chimney, communicating with an ash bin in the cellar. The mouth of the flue is kept covered with an iron slide. The bin in the cellar is made of stone, and is of sufficient capacity to hold the winter's stock of ashes. But the stove has so generally taken the place of the open fire that other contrivances are used. Some put up a small brick building expressly for the purpose, having a half door in the upper part, for convenience in emptying the ashes. Blistone flags are convenient for making bins of smaller size, and are not very expensive. Perhaps the cheapest article for this purpose is a cement tile, two feet in diameter, covered with a piece of zinc or sheet iron. It is cheaper than iron, and fire-proof.

Wintering Stock on the Prairies.

There is every excuse to be offered for the western farmers who winter their stock on the warm sides of straw heaps and hay stacks on the prairies, for they have, in many cases, had hard work to build a comfortable shelter for their own heads. When farmers in the older settled States do the same thing, that is, expose their stock to the rigors of the winter, the cuts of satire and the lash of open reprobation are all that will bring them to their senses. For the cattle's sake we often resort to the appeal to the pocket, and this is listened to; and, though nev-

er so softly whispered, is heard above the lowings of the shivering herd. A correspondent, of Winchester, Iowa, (signing himself "Titus,") sends us a description of straw sheds, that are easily made and good for prairie farmers who have no market for their straw. He writes:

"Physiologists tell us that it is the food which animals eat that keeps up the animal heat, in the same manner that coal or wood keeps up the heat of a stove or furnace; and as a natural consequence, it would take less food to maintain the proper temperature of the body, were it kept warm by other means. This is the theory: the facts are that all kinds of stock, if sheltered



STRAW SHED FOR STOCK WITH AN L.

in cold weather, require a great deal less food to keep them in a good, thriving condition, than other stock do that are exposed to the weather. I once tried to make a calculation of how much I could save in feed by keeping my cattle sheltered; and although I did not arrive at any very definite conclusion, yet I was well satisfied that I could save more than enough to pay all the expenses of putting up warm, permanent sheds; besides avoiding all those evils that ill treatment always entails on all kinds of stock, surely and speedily impairing and even destroying the good points of any breed, however hardy.

STRAW SHEDS.—Very good temporary sheds for cattle and sheep can be made of a framework of rails or poles, and covered with straw. This will shelter stock the best by making it in the shape of an L, with the east and south sides left open. It should be so arranged that the stock can pass from the shed into the feeding yards or stalk fields whenever they choose. We, in the West, after gathering our corn, turn our cattle into the stalk fields, where they make a tolerably good living at nipping what fodder they like, and picking up nubbins of corn that were overlooked when the crop was gathered.

Prairie grass, or rather prairie hay, makes an excellent covering for a shed, as it turns the rain much better than straw does. If it is put on somewhat after the manner of thatching, it does all the better, and requires only a comparatively small amount of hay, and will turn the rain for a long time. It also makes excellent forage for cattle, and I have known whole herds here in Iowa to be wintered on nothing but prairie hay. A little grain fed out with the hay would, in my opinion, more than repay the cost of it, let the price be what it might. The stock should never get to the outside of the straw shed—I mean on the side on which the straw is piled,—for they will tramp down and waste the straw, and destroy the whole shed in a few days. Such a shed as this will answer every purpose of a better one so long as it lasts.

Farm and Lawn Roads and Highways.

There is no one thing which so marks the difference between a long settled and a new region as the roads; and yet, throughout this democratic country, where so few public expenditures can be made which do not carry with them at first sight assurance of their economy, we seldom find good ones, and it is hard to secure thoroughness in making new roads.

There are three requisites of a good road: 1st, Dryness; 2d, Firmness; 3d, Proper form. The first may be secured wherever good drainage can be had, by laying a tile drain capable

of carrying the water four feet below the middle of the road. Tiles are better than stones for drains, because if well laid and either turned aside or provided with silt basins wherever change of level decreasing the rapidity of the descent occur, tiles will never fill up, while stone drains are very likely to. The tiles being covered after the most approved manner, as described in former numbers, (the joints protected by collars or otherwise, and the stiffest soil rammed down hard over the tiles), the road bed must be made. For this purpose the roadway should be nearly level, following a little from each side alike toward the drain in the middle, and at least a foot below the intended surface of the road, if it is to be merely a farm or lawn road of say 20 feet in width, but deeper in proportion for broader roads and highways. This bed is laid with large stones, (flatish ones do best for small roads and carriage ways), and the surface should be only slightly crowning in the middle. Broken stones, from the size of one's fist to that of an egg, are laid upon these, and this layer is made crowning according to the usual practice, and forms a bed upon which a small amount of sharp, sandy gravel soon makes a smooth, hard road, if well rolled.

The usual custom is to have a ditch or gutter at each side of the road. This in the case of



SECTION OF ROAD.

carriage ways and park roads bounds the grass and keeps it from encroaching upon the gravel. The result is that either the earth washes away, and an irregular surface ditch is formed, or the flow of water is stopped by gravel washed from the road. We present in the accompanying engraving a plan recently brought to our notice, which offers two advantages above the common practice, and though applied, so far as we know, exclusively to park roads, is equally applicable to others of sufficient width for two wagons to pass conveniently. The differences between this and other well made roads are solely in the shape and in the arrangement of the surface.

It will be observed (see figure,) that the section of the surface instead of being *crowning* is *angular*, the angle being in the middle like a very flat roof of a house. The use of this form is, that the road may be made much flatter than otherwise, and it gives a tendency to drive equally on both sides and not exclusively in the

middle; besides rain falling flows off more freely and completely. The gutters are made as usual at the sides where the road bed ends, stoned if necessary to prevent washing, but the grass is allowed to cross them, and come up some two or three feet upon the gravel, where it is trimmed to a uniform edge. The advantage of this arrangement is that, while the water from the road quickly finds its way through this strip of grass to the gutters, it does not carry the sand with it and does not wash away the sides of the road. It is a bad plan to allow large quantities of water to flow close by the side of a road, unless the channel is broad and well walled and paved. In case of freshets damage is often done.

GAS-HOUSE LIME.—This article has the effect of lime in but a slight degree. After it has been weathered, it consists to a great extent of gypsum, (plaster.) Its effects upon the soil are to supply lime to the plant where this ingredient is wanting, (which on common soils rarely occurs,) to supply sulphur and sulphuric acid, and to produce that series of obscure, yet beneficial effects which plaster does,—all of which plaster will do equally well or better, but not so cheaply. The weathered gas lime often contains small quantities of lime remaining long in the condition or slaked lime. This is considerably abundant when the article is fresh, and then it acts with good effect in vegetable compost heaps, upon muck, etc. If applied to the soil in this fresh state, and, during the growing season, placed upon the soil where crops will be affected, the results are uniformly disastrous, not owing to the lime, but to various combinations of sulphur with lime, which, after some months' exposure, become converted into the sulphate of lime, or gypsum above alluded to.

Draining in Winter—Draining Tools.

The draining may often be done in winter better than at any other season, especially where the ground rarely freezes very deep. A large body of snow falling early will often prevent the frost getting into the soil, and one will often be surprised to see how a few strokes of a sharp, heavy pick will crack up the frozen crust. Of course the ditches must be dug, the tiles laid, and all filled and finished as rapidly as possible, lest it be filled prematurely with snow and ice. As protection against this occurrence and to prevent the ditch and earth freezing on a cold night, straw may be laid across the ditch and upon the heap, being kept in place by poles or pea brush. At other seasons tolerably good work may be done with common tools, but in winter the very best are most economical. There is pressing necessity to move as little earth as possible, and yet to get down to the full depth, (4 feet usually). Our Western readers frequently inquire about draining tools, and doubtless would very often order them were they advertised. For their information we would state that every first-class agricultural store that we know of either keeps them on hand or will procure them if ordered,

Clear the Water Courses!

There is hardly a county of which we have any knowledge in which there are not some sluggish streams whose flow is hindered and rendered slow almost to stagnation, at least in certain spots along their course, by unnecessary

obstructions, drift wood, logs, fence rails, reeds and sedges, etc., or by a very circuitous course. The result of this sluggishness is that the swamps are more extensive than they need to be, the water sets back, into the plowed land even, thorough drainage is impossible, miasms rise from those swamps which retain their water into the warm weather, farming operations are put back or rendered futile, crops are poor, and fever and ague, typhoid and intermittent fevers prevail, men are short-lived, and their children have enfeebled constitutions. It is easy to deplore this state of things. It requires action to put an end to it, and this might, to a degree, be done in most States almost as easily as to get a railroad charter, if any one energetic man would give to it a little time and labor.

It is obvious that where farms are small, or especially where the country is very flat and the streams are all sluggish, individual proprietors can do but little. Co-operation is required, and this must be continual; for, after swamps are reclaimed, fields drained, health and prosperity introduced, all must not relapse into the former dank, boggy, miasmatic state, because the streams are allowed to become again obstructed. Acts of legislation will probably be requisite to secure proper attention to the subject, but soon it might be with the water courses much as it is with highways. Every township or county is responsible for its own roads, and for affording facilities for travel into and through its territory.

Mr. James E. Rankin, of Detroit, directs our attention to the annoyances and losses suffered by the people of many parts of Michigan, and suggests that the duty of keeping the water courses clear might be added to those of the highway commissioners without making their labors too onerous. If this could not be done, county water commissioners might be appointed, or elected, to secure the desirable ends suggested, in accordance with law. In the older States, at least, relief, to a certain extent, may ordinarily be obtained through the road surveyors, or highway commissioners, and town officers, a regular hearing being had; but the decisions in these cases are usually based on what the former condition of the streams has been, not having a view to the improvement of the county and to the benefit of the community. The common law allows a landholder or tenant, under certain restrictions, to secure drainage for himself; but a law is really needed to check disease, to improve the country, and to benefit agriculture. Let the legislatures require proprietors to keep the water courses clear.

American Farm-House Plans.

So far as we now recollect, we have never seen a good plan for an American farm-house. We demand a great deal. Our farmers are ambitious for themselves and their children. They are workers, individually and collectively. The whole family work for a living, and glory in it. They are the substantial middle class, with good incomes, free, independent, hospitable, intelligent, and cultivated. They are the aristocracy and gentry of our land, educated, refined, practical, sensible; having the confidence of neighbors, townsmen, and fellow-citizens, they are our Senators, Representatives, and Governors. The house and home of the farmer must therefore combine in itself features which are necessities for the laboring man, conveniences and accommodations for the well-to-do yeoman, with his cultivated mind and free hospitality, and more or less of the luxuries which distin-

guish the homes of the "gentry" of other lands. We present herewith a plan of the ground floor and second story of the dwelling of a farmer of abundant means, and propose at some time to show also how its main advantages may be retained in much smaller and cheaper houses.

The plan is of a house 36 x 50 feet, (not allowing for the walls, which would vary according to

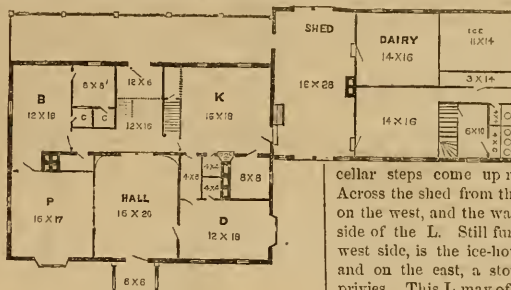


Fig. 1.—FIRST FLOOR.

the material, wood, brick, or stone, of which the house may be built,) with an extension 28 x 46 feet. It is intended to front east or south. In the middle of the ground floor is the large hall or sitting-room, with which the other rooms directly or indirectly communicate. This is a room 16 x 20 feet; at the rear of it is a back entry, 8 feet clear, with a staircase at one side, which rises by 11 easy steps to a platform over the back door, and thence by 5 steps to the second floor. This arrangement precludes the necessity for back or servants' stairs, for thus the only staircase is shut off from the rest of the house, yet perfectly accessible. On either side of the hall, doors, which may be either single or double, open into the dining-room (D) on the right, and the parlor (P) on the left. Connected with the parlor, and opening into the back entry, is a large room (B) which most farmers would make their own bedroom. It has a good-sized, light dressing-room, and two liberal closets, one opening into the dressing-room. This room would make a very pleasant library, with an alcove (the dressing-room) for retiring for quiet study or writing. Should it be used as a bedroom, some of the other rooms would become of necessity the place for books, and book-cases would adorn the hall, the parlor, or the dining-room, according to the taste of the occupants, the uses to which the rooms are put, the size of the family, number and age of the children, etc. The kitchen (K) communicates with the dining-room by a short passage way, and is cut

the mistress keeps the key; and it has a fine large pot-closet near the chimney. The kitchen is large, being 16 x 18 feet, and may be used as a dining-room, if that style of living is preferred. The china-closet is spacious, 4 ft. x 4, which is large enough for any ordinary family.

The back door opens upon a 10-foot piazza, crossing the west side of the house, having a door into the shed on the north. This shed is 16 x 28 feet, with a paved floor, and double doors at either end, so that a wagon may pass in or through, leaving or taking a load. The cellar steps come up near the kitchen door.

Across the shed from the kitchen is the dairy, on the west, and the wash-room on the east side of the L. Still further in the rear, on the west side, is the ice-house, with a cool-closet, and on the east, a store-room, staircase, and privies. This L may of course be indefinitely lengthened, and made to connect with the wood-shed, carriage-house, horse-barn, etc.; but we think it well not to maintain too intimate a connection with such buildings; the danger from fire is greatly increased and no adequate convenience gained. The shed is large enough to contain a three months' supply of wood, or even a winter's supply, if desirable; a large closet for keeping utensils, tools, etc., in frequent use about the house; a stove and table, when the shed is used as a summer kitchen; besides furnishing protection from the weather at all seasons. We do not recognise the desirableness of making such a shed a wood-house, as is frequently done, for it is much more convenient for other purposes, considering its use at different seasons. However, should this be demanded, we have only to put the dairy and wash-room next the kitchen, with a cellar under them, and to use the wash-room for a back kitchen. Then the shed, located next beyond, may be made a wood-house; but its great convenience as a place to do many kinds of work which would otherwise have to be done in the kitchen or outdoors, would be lost.

The second story plan is worthy of notice, for, though very simple, it is arranged for the special convenience of the housekeeper and servants. All the rooms have spacious closets; two have dressing-rooms. There is a large linen-closet, and a bath-room, opening into the central upper hall, into which the stairs rise, and which is itself abundantly lighted by the large staircase window. A passage from the hall to the second floor of the L connects with the servants' bedrooms, (S, B, R.) which may be shut off from the main part. The second story of the L is represented as low, and lighted by dormer windows on the sides. Additional expense would raise the roof and make this floor much more spacious.

If a range, or stove, with a water-back be set in the kitchen, nothing is more simple and safe than an arrangement for having an abundance of hot water on the second floor by pumping; and, if a head of water can be controlled, hot and cold water may easily be conveyed to every room in the house, which is the perfection of water arrangements. We know that multitudes of our most respected readers enjoy their wash at

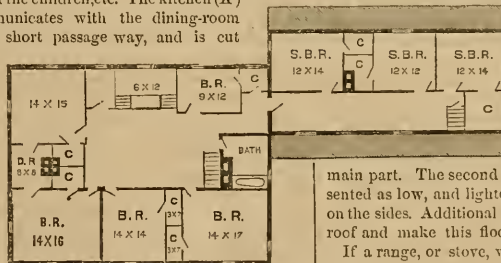


Fig. 2.—CHAMBER FLOOR.

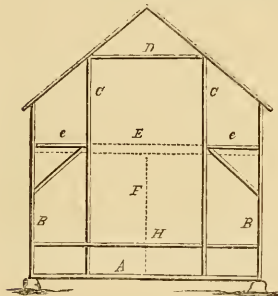
off from it by two doors, which would generally prevent the noises and odors of the culinary department being especially observable. This room has two windows, a door into the back entry, one into the shed, and one down cellar. Into it opens the 8 x 8 store-room, of which

the well every morning so heartily that the idea of hot and cold water flowing in unlimited abundance in their bedrooms seems like the height of effeminate luxury. But affording as it does the opportunity of frequent and thorough ablutions, we esteem it as a most desirable feature in any dwelling. At any rate, we would have water, hot and cold, at some point on the second floor, and the bath-room is the most appropriate place.

The second floor may be a full story, say 8 feet in height from floor to ceiling, or the roof may be low, and part of the ceiling close to the roof be made sloping. This depends upon the style of the building, whether it be two full stories, or what is called a story and a half in height. The plan answers equally well for both. In either case there should be a good loft or garret. This is not inconsistent with a house in the cottage style, especially if the gambrel roof be employed. This is coming of late into fashion, as it was 50 to 100 years ago, and has at least the advantages of giving high, roomy garrets, and a picturesque appearance.

Dispense with the "Big Beam" in Barns.

The framing of old-fashioned barns was not done with especial reference to convenience in unloading hay by horse-power. Common mechanics now possess superior knowledge of bracing and strength of materials to that of our fathers, and architects of ability have applied



SECTION OF BARN FRAME.

themselves to finding out cheap and strong ways of putting up wooden structures. The result is that our wooden buildings are not only better framed, but stronger than the heavily timbered ones of 50 to 100 years ago. The old barns, however, still stand, and, for aught we see, their period of usefulness may not cease for 100 years more. Where timber is abundant the old plan of framing is still followed quite extensively. There are several ways of doing away with the "great beam" in new barns; it is, however, more difficult to take the beams out of barns in which they were originally placed. In using the simple horse hay-fork each "grip" must be dragged over these beams, while otherwise the hay might be simply pitched off, or swung directly from the load to the mow.

Mr. Walter Moore, of Orange Co., sends us the description of a plan which he saw carried out in a barn of John Larkin, in Livingston Co., Mich., which is shown in the accompanying sketch. This represents a single "bent," or piece of cross framing, with the big beam out, and the purlin posts extended to the sill. In the cut, *A* represents the sill; *B*, the posts; *C*, the purlin posts; *D*, the tie beam between the purlin plates; *E*, dotted lines showing where the big beam would be; *e*, *e*, beams and braces in place of the big beam, to stay the purlin posts; *F*,

the centre post; *H* is the breast girt on each side of the thrashing floor. The plan strikes us as likely to be useful in many cases, and not of necessity weakening the structure, which it would do were the work carelessly done.

Apiarian Progress.

A member of that enterprising firm of apiarists, Bidwell Bros., St. Paul, Minn., in making an extensive tour among the bee-keepers of the United States, arrived at some very interesting practical and theoretical results which he communicated to the readers of the *Agriculturist*.

During July, Aug., and Sept. last, we visited		
12	Apiaries in Minnesota, containing 1,088	Colonies.
8	" " Iowa, " 551	"
5	" " Missouri, " 623	"
6	" " Illinois, " 207	"
4	" " Indiana, " 49	"
12	" " Ohio, " 841	"
3	" " Kentucky, " 10	"
6	" " Tennessee, " 172	"
2	" " Georgia, " 31	"
2	" " Florida, " 14	"
1	" " Rhode Island, " 6	"
5	" " Connecticut, " 37	"
3	" " Massachusetts, " 73	"
14	" " New York, " 1,004	"
2	" " Canada, " 12	"
6	" " Michigan, " 74	"
8	" " Wisconsin, " 507	"
In all.....		5,373
103		" 16 States and Canada.

(This shows an average of over 52 stocks to each apiary.)

We found movable comb frame hives exclusively in 22 apiaries; used in part in 64; other patent hives in 11; common board hives alone in 6 apiaries. We found 4,241 frame hives to 998 box, and 120 worthless patent hives. This substitution of movable comb hives for the old-fashioned box hives during the last several years, we consider the most important step in the advancement of profitable bee culture. We found fourteen different kinds of frame hives in use, seven of them of different patents.

The next most important step has been the cultivation of flowers for bee pasturage. We found only six apiaries where natural forage was abundant throughout the season, and this was in small apiaries in isolated districts. Adjacent to 32 apiaries flowers were sown to cover deficiencies, and these were by far the most successful apiaries we visited, making nearly double the surplus honey compared with the others taken as a whole. Some serious mistakes were made by a few bee-keepers in the kind of flowers and manner of cultivating them. In two apiaries the honey resources were so deficient that feeding was resorted to annually. In fourteen apiaries flowers were so few that the owners declared their bees were neither prosperous nor profitable. Were this branch of bee culture properly understood the yield of surplus honey might be increased several hundred fold.

In 63 apiaries forced swarming was resorted to, and in only three of these were natural queens used, the remaining 40 relying on natural swarming. Natural queens with forced swarms have been the most reliable. Nowhere did we find the miller worm of any serious inconvenience except in the two apiaries where feeding was necessary; six bee-keepers had never seen one. In three apiaries we found foul brood in a mild form and easily controlled.

In 78 apiaries so-called Italian bees had been introduced. In no apiary did we find Italian bees exclusively. In no two apiaries did we find Italian bees alike; neither in any two stocks in the same apiary, nor in any one hive were the bees all alike, allowing for the difference in color, size, and shape, in bees of different

ages. Ninety-four queens, better than the average, were shown us in ten different apiaries, in six different States, no two of which, as we judge, were alike. Twenty-six of these had the visible stripes of a recent mixture of black blood, and only two queens that we saw were of a bright yellow color, and one of these had evidently mated a black drone. In no apiary did we see or hear of a well marked drone, nor any one where the queens were known to have been mated even to their best drones. Apiarists are most deficient in careful breeding.

We saw ten imported queens, all unlike. If such a confusion in size, shape, and color, is consistent with purity, as claimed by many, it is no such purity as we recognize. We have spent three seasons in efforts to perfect Italian bees and have succeeded in rearing workers, drones, and queens, all alike, and handsome, by carefully selecting and mating the best, but we had to breed all the brown off from the abdomen of the queen, and bring three entire yellow bands on the drones. Unfortunately a long cold spell last winter took the color off from our bees and left us worse than where we commenced, compelling us to adopt these conclusions: 1st, that Italian bees are a cross between (probably) two varieties of bees; and 2d, that they are liable to deteriorate in our climate."

Little Things in Farming.

The whole success of a farmer hinges upon timely attention to little things. This, mainly, makes the difference between thrift and poverty. The philosophy of success is expressed in that old adage, "For want of a nail a shoe was lost, for want of a shoe a horse was lost, for want of a horse a man was lost." It is a little thing to keep accounts of the pecuniary transactions upon the farm. A half hour Saturday evening would enable most farmers to know just how they stand with the world. Yet, we suspect half of the men who cultivate the soil never make an entry in a book, and for want of this, the account runs up fearfully at the store, and many articles of luxury are purchased for which they are unable to pay at the end of the year. Debt accumulates, the farm is mortgaged, and finally lost, for want of a little paper and ink. It is a little thing to put up a tool in its place when not in use. Yet many have no tool-house, or place of shelter for any implement or vehicle. Things are left where they were last used, the plow in the field, the cart in the yard, the chains in the stable, the harness in the wood-house, the axe at the wood-pile, and the rakes in the corn crib. Many do not even house the expensive implements they have bought, and reapers and thrashers are treated like old plows and harrows. The parts made of iron and steel grow rusty, and the wood decays. A machine that is good for thirty years with proper care is used up in five by abuse. It is a very little thing to turn a nut when it is loose. Yet for want of the tightening the nut is lost, the bolt comes out, and the loaded wagon breaks down on the way to market, and a whole day for man and team is lost. It is a little thing to keep a horse properly groomed, yet for want of clean fetlocks the skin cracks and the horse is lame, and the owner loses the use of him for months or weeks. Ventilation is a small affair, yet for want of it the health of stock in stables suffers severely, and disease sets in. It is a small affair to provide good seed at the beginning of the year, but the whole success of the season depends upon it. It is an easy-thing to

deal fairly with your neighbors and make a name that is better than "precious ointment." Many cheat on small occasions, do not deliver what they sell, and get a reputation for meanness that stands in the way of their success.

Our Sugar Supply.

The principal plants which supply the sugar and syrup of the country are the sorghum, the sugar maple, and the sugar cane. The manufacture of beet sugar in the United States is yet in its infancy; in France and Germany it has had the fostering care of the government, and has grown into an important industry. Vermont is the only State that comes near to supplying the wants of its people with sugar and syrup from the maple. The Sugar or Rock Maple, (*Acer saccharinum*), grows abundantly in most of the Northern States, but no system has been adopted in its cultivation, and little pains taken to spare the trees in the primitive forest. Sugar-making is regarded by most farmers who own a "sugar bush," as a small business, to be carried on in February and March, when nothing more favorable offers, as it gives employment at a season when other labor is scarce. The price is several cents a pound higher than the best refined cane sugar, and much more of it might be profitably made.

Since the introduction of the Sorghum and Imphee seed, and the distribution of the former so extensively from this office several years ago, the manufacture of syrup, especially at the West, has become an important industry. The war came very opportunely to stimulate prices, and many Counties made more than syrup enough to meet their own wants. With molasses at 80 cents a gallon, there is no doubt that the West, and perhaps the East, can make their own syrup cheaper than they can import it. But it remains to be seen whether this can be done when prices drop down to the ante-war standard. There is much complaint of the falling off in this crop the present year in the States where it has been most largely raised. This may be partly owing to the drouth, but we suspect the drooping of prices has had quite as much to do with it.

The cultivation of the sugar cane in this country is confined mainly to Florida and the alluvial portions of Louisiana and Texas. Before the war, Louisiana produced from three to four hundred thousand hogsheds of sugar, and yet hardly a twentieth part of the lands adapted to this crop were brought into cultivation. In the other two States less has been done. There can be no doubt that we have in these cheap and fertile lands the means of producing sugar economically for home use and even for export. There are some drawbacks to its production there, but there are also very great advantages. The cane has to be renewed much oftener, and the season of growth is only two-thirds as long as within the tropics. But, on the other hand, the Louisiana planter has the advantage of large protection, a soil inexhaustible with suitable tillage, the latest improvements in machinery, and free labor. The greatest drawback to the rapid development of this industry is the derangement of the levees, resulting from the war. These extend all along the banks of the Mississippi, and of the bayous that run from it by short cuts to the Ocean. The whole success of the crop depends upon the integrity of these embankments, and this cannot well be left to individual enterprise, for every man would live at the mercy of his neighbor. They extend far above the sugar region into the States of Mississippi and Arkansas.

The question naturally arises: "Could not the U. S. Government take this matter in hand and guarantee in some way security?"

A correspondent argues that the Government would do a beneficent thing for the whole people by taking charge of these levees, putting them and keeping them in repair, remunerating itself by a small tax upon the lands benefited. He adds: "This would give security to the cultivator, and invite the capital which this region so much needs for its development. A large capital is already invested in dwellings and machinery, and cleared fields, but much of it is unproductive on account of the overflow. Let the Government afford this security, and this industry will soon be put upon a better basis than it had before the war. The system of small farms could be introduced, if a capitalist would furnish the means of manufacturing the sugar. A hundred small farmers might settle near him and thrive by raising the cane. There need be no more difficulty in organizing this business and dividing the profits satisfactorily, than is found in the manufacture of sorghum syrup, or of cheese in a dairy region. These alluvial lands are fitted to support a denser population than any agricultural region of the North. There is no rock, no sand, not a foot of soil that will not produce its hundred fold."

Our friend is perhaps ignorant that the Government has already appropriated what is equivalent to millions of money for these levees, and now judiciously, we think, looks over the whole ground to see that no more goes in the way that that did. It is indeed true that the judicious aid of a strong State Government, or of the United States, is needed to fully develop this beautiful and productive region from ever-threatened inundation. With all that has been done, this splendid region is but opened, only its river edge settled. We greatly desire to see it redeemed from the dominion of the cypress and the alligator, and made the home of the cane and of man.

China Tree Fences in Mississippi.

AN IDEA FOR WESTERN FARMERS.

[A correspondent of the *Agriculturist*, writing from Mobile, describes a practice followed on the prairies of Mississippi, which may well have imitators in the Western States, wherever the China tree will grow, or a substitute can be found. This tree, which is called also Pride of India, (*Melios Azedarach*), is common in the Southern States, and naturalized in some places. It resembles the Ailanthus somewhat, the foliage being, however, much more delicate, grows quickly, and survives quite severe freezing. Ed.]

"On the prairie lands of Mississippi not a tree can be seen for miles, except such as may have been planted for shade about dwellings, and the soil is as devoid of rocks as of trees; so the planters resort to the following method of 'growing' fences. They drill in on the line of the intended fence, in the fall, the seed of the China tree; the following spring strong shoots come up, growing several feet in height the first season. These are thinned out to 10 or 12 inches apart, and left to grow, the tops being pruned that they may not be blown down, and also to force as much growth as possible into the trunks. As they grow very rapidly, only about 4 or 5 years are required to fill about one-half the space between them. When of sufficient size, the tops are all sawed off evenly at any height required, (in autumn,) and allowed to fall on either side of the stumps, and to lie and dry during the winter. In the spring, when vegeta-

tion again starts, these tops are set on fire and burned, the heat being usually sufficient to kill the stumps, and soon the bark peels off, leaving a line of straight white posts, firmly set in the earth, which will last for a long time. I don't know as this tree will stand the cold of the Northern winters, but think it will; and if so, only a little time, not much trouble, and almost no expense, will attend the setting of a good fence. Any quantity of seed can be had in this section of country at small cost." C. C. W.

Peruvian Guano and the Chincha Islands.

Along the western coast of South America, south of the equator, little or no rain falls; at some points none whatever, or if any, but a misty sprinkle, as a rare exception. Here all substances liable to decomposition under the conjoint influences of air and moisture, are subject to circumstances rarely met with in nature on other parts of the globe. The waters abound in fish, and so fish-eating birds and sea animals are very numerous along this coast, and especially upon the adjacent islands, of which there are several groups lying at no great distance off the shore. On these islands great quantities of the deposits of the sea birds accumulate, consisting of their dung, with the parts of the fishes which they reject, their feathers, eggs, and immature young, their own dead bodies, etc., and similar deposits of seals, particularly of the Sea Lion, a large kind of seal, occurring here, great numbers of which die and leave their carcasses on the islands. This is "guano,"—"huano," (manure), of the Peruvians. The accumulations of these deposits are so enormous as to make a marked geological feature on many of the islands, but on none are they so extraordinary as upon those of the *Chincha* group.

These are three volcanic islets lying about 14 miles from the coast of Peru, to which State they belong. They are situated just without the Bay of Pisco, and about 90 miles southward from Callao, the port of Lima—places which may be found on any good map of South America.

The great value of this substance as manure was well known to the ancient Peruvians, whose legislation on the subject indicates how they prized it. Killing of the birds at any time, and even visiting the islands during the breeding season, was punished by death. The attention of the scientific world was first called to guano by Humboldt, 1804; and though Sir Humphrey Davy directed the attention of the agriculturists of Great Britain to it as early as 1810, and experiments were made with it, not a single cargo was carried to Europe until 1840 and '41. Since that time an immense trade has sprung up, which is altogether under the control of the Peruvian Government, and productive of a large revenue. The guano is sold by agents of that Government in New York, London, and perhaps at other important ports, and all cargoes taken from the islands are consigned to them.

The Chinchas offer so few attractions, and so much that is positively repulsive, that few travelers have visited them and given minute descriptions of the islands, or reports of their impressions. We are happy in being able to present the accompanying striking pictures taken from photographs of the harbor, and of the guano beds, or better, perhaps, mountains.

From the narrative of Mr. G. W. Peck, published in 1854, and from other sources, we learn much concerning these wonderful islands. Their geological formation is represented as resembling a great piece of furnace slag, full of



Fig. 1.—VIEW OF MIDDLE ISLAND AND ROADSTEAD.

bubbles; these bubbles forming innumerable caves and arches. Mr. Peck writes: "The precipices around each of the islands and of the Balista group, which is of similar formation ten miles to the southward, are entirely perforated with immense caves, that often have only a thin

unapproachable recesses." * * * "Sometimes the rock is 100 or 200 feet thick over these caves, at others it is a mere shell precisely like a section of a bubble in a cinder." He adds, "I speak of them as bubbles,—many of them are 60 feet to their roof and more than that across." The

and being moored to buoys so as to lie near the cliffs, the guano is loaded through shutes, in the same way the ship's launch is represented as receiving its load in figure 4. The entire surface of the islands is covered with guano, except where the waves wash the rocks, or the sides are



Fig. 2.—GUANO BED OF NORTH ISLAND.

crust above them, and extend in, no one can tell how far, since only a few of them can be ventured into on account of the surf that rolls in great waves into them, with thundering noises and perpetual turmoil. Far within, the dark dripping ledges may be seen covered with nests

author also mentions caves 100 feet high and arches 150 feet high and 200 feet across.

These cavernous patches of rock in the ocean rise to a height of 200 to 350 feet, having a few beaches where landings can be made, and no points at which ships can be moored to wharves,

precipitous. In the deepest parts it is not less than 160 feet in depth. The composition of different samples varies somewhat, but much less than would be supposed from the color, which in some places is a light ochreous yellow, and in others quite red. Figure 1 shows a view of

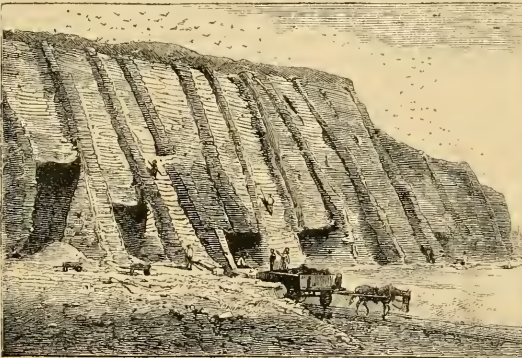


Fig. 3.—PORTION OF GUANO BED.

and birds, wherever nests can be stuck or birds stand; and along with the wind and spray that rush out as the waves advance, come the hoarse cries of penguins and the roar of Sea Lions which have their favorite haunts in such

on account of the constant roll and dash of the great waves rolling in from the broad Pacific.

Ships are moored in roadsteads between the islands, and receive their loads from large boats, though sometimes the ships approach the shore,

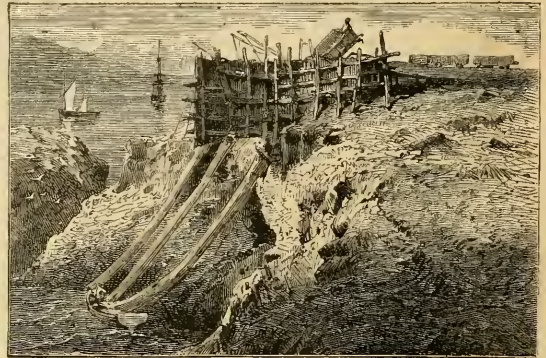


Fig. 4.—LOADING GUANO.

Middle Island, with the roadstead gay with shipping, and in the foreground the top of one of those remarkable arches before described. Figure 2 shows the great guano bed on North Island, a nearer view of a portion of which is seen in fig. 3.

AMERICAN MISTLETOE.—(*Phoradendron flavescens*.)

Parasitic Plants.—The Mistletoe.

The European Mistletoe, (*Viscum flavescens*), is familiar to us from the frequency with which it is mentioned in literature, and the legends and superstitions connected with it. With the Druids it was, when collected at the proper time, a charm against diseases; to this day it is hung up among Christmas decorations, and kissing under it is a custom, though we are not informed that it is one confined to that particular time and place. Our American Mistletoe, though it differs from the European in some points in the structure of the flowers, bears a general resemblance to that, and would no doubt prove equally efficacious in the particulars above mentioned. The botanical name of our plant is *Phoradendron flavescens*. The generic name is from the Greek for *thief* and *tree*, and has reference to the habits of the plant, which lives by stealing its food. Our plant is found from New Jersey and Illinois to Texas, and perhaps further south, and other species are common on the Pacific coast. It is a true parasite, that is, it is not only attached to the tree, but penetrates its substance and lives upon its juices. We have mosses and lichens, and in the tropics there are many orchids, ferns, and others, that grow upon the branches of trees, but derive their sustenance from the atmosphere; these are not properly parasites, but epiphytes. The epiphyte is simply a lodger, while the parasite has both board and lodging. The Mistletoe produces a small, one-seeded berry, which is exceedingly viscid and sticks with considerable tenacity; this property enables it to adhere to the branches of trees, to which it is probably conveyed by

birds. The seed, thus attached to the bark, germinates and throws out its radicle, which fixes itself to the bark and ultimately penetrates it, and the plant, finding nourishment in the sap of the tree, develops itself. The stems grow from nine to eighteen inches long, are much branched, woody, but rather brittle. The leaves, (which endure all winter,) are from three-fourths to over an inch long, leathery in texture, and, with the stems, of a yellowish-green color. The flowers are small and greenish, the staminate and pistillate being on different plants. The engraving, taken from a Maryland specimen that was somewhat injured in transportation, shows the shape of the leaves, the general habit of the plant, and the manner of its attachment to the branch of an oak. Where it occurs abundantly, it is of course injurious to the tree upon which it feeds; in some parts of the South and West it has destroyed valuable forest trees.

We have seen it, in some instances, so abundant as to completely hide the foliage of the tree which served as its host. We have not known of our species proving, as does the European, injurious to orchards, although it might readily become so, as it is not very particular as to the kind of tree upon which it feeds, and seems very much at home on the Wild Cherry. The late Doct. C. W. Short, of Kentucky, informed us that a few unusually severe winters completely exterminated it in his locality, but that after a few years it again appeared as abundantly as ever.

Variegated-leaved Ivies.

The use of Ivy as a house plant has often been advocated in these pages. The ease with which it is propagated from cuttings, the pleasing shape of its foliage, its rich and healthy looking green, its patience with all sorts of treatment, and the interesting associations connected with it, make it a plant every way desirable as a household pet and ornament. In the climate of New York it does tolerably well against walls out-of-doors, but it gets badly cut back in severe winters, though in Pennsylvania and further south, it seems to be quite at home, and flourishes finely. Of late years the forms with variegated leaves have become very popular in Europe, and the catalogues give over twenty named varieties. Some of these are of great beauty, especially those that have well-defined margins of yellow or clear white, in marked contrast with the deep green of the rest of the leaf. Some of the finest varieties do not succeed well in the open air, even in the more genial climate of England, and with us we shall probably find that we must

VARIEGATED IVY.—(*Hedera maculata major*.)

grow even the most robust of them indoors. There is a great difference in these variegated sorts. Variegation, at any rate, may be looked upon as a sort of disease, and the more "pale and interesting" the specimen the more petting it will require. But there are some that, while retaining their pleasing markings, have a vigor of growth that well adapts them for house culture. Mr. George Such, of South Amboy, N. J., an enthusiastic florist, always on the look-out for novelties, has tried a great many of the variegated Ivies, and out of the whole has found two forms that he considers worth propagating. One of these seemed to us so beautiful that we had an engraving made of it, and our artist has given the best representation that is possible with black and white. The leaves are finely mottled with yellowish-green and pure yellow, and have none of the sickly look so common in variegated plants. The specimen had apparently all the vigorous growth of common Ivy, and like that, put out an abundance of aerial roots along the stem, enabling it to be propagated with the greatest ease. The variegated Ivies should be grown in rather poor soil, as they are liable to revert to their green state if fed on too rich food. If any branch shows markings better defined or different from the rest of the plant, it should be propagated.

VIOLETS AND PRIMROSES.—A lady who was an invalid last winter wrote to us of the pleasure she derived, during her long imprisonment in the house, from sundry pots of Violets and Chinese Primroses. We intended to earlier call attention to the value of these as window plants, but they may now be had already potted of

most florists. The best violet for the purpose is probably the Neapolitan; it is double and very fragrant. It needs a rather cool room and should not be over-watered. The Chinese Primrose is valuable for the long time it remains in flower. It is now to be had in great variety, both double and single flowers, of pink of various shades, and pure white. They are easily raised from the seed, sown in May, but now plants just ready to bloom must be purchased.



Fig. 1.—SECTION OF APPLE FLOWER.

An Apple and How it is Described.

Those not familiar with pomology have in several instances asked us to explain the terms used by writers in their descriptions of fruit. The best way to make the matter understood is to give a general idea of the structure of the apple—and as there are probably many who have been familiar with apples all their lives who have never thought about their structure, we think the subject of sufficient interest to illustrate it. If we examine an apple blossom, the five petals, the most conspicuous parts, first attract the attention. On turning the blossom over, we see the five green points of the calyx, and below these a small green knob, to which they seem to be continuous, which is the calyx tube. The calyx is regarded as being composed of five parts, which are united part way up to form a sort of tube or deep cup, and the rest of the way they are free, and show as the five green points before noted. Now look inside of the

will be found the elongated parts (styles) of five pistils. These parts seem to be all united at the base of the flower, or to rest upon the calyx tube. To get a better idea of the structure, cut the blossom open lengthwise, as in figure 1, which shows one of the points of the calyx, *b*, two whole petals, *c*, and part of another, several of the stamens, *d*, and three of the five pistils, *e*. The lower portion, or ovaries, *f*, of two of the pistils are shown as cut open, exposing the ovules or undeveloped seeds. The ovaries are surrounded by and closely united to the calyx-tube, *a*. This, then, is the appearance of the apple blossom, so unlike the fruit which is to come from it. Now let us note the changes that take place. A few days after blossoming, the petals fall to the ground and decay, the stamens wither, as do the long portions of the pistils, the points of the calyx remain alive, but instead of spreading as they do in the blossom, they usually curve in toward one another, and grow but little, if any. Not so the remaining parts. The ovaries, *f*, increase in size, but the calyx tube, *a*, does this in a still more remarkable degree, and grows out of all proportion to the other parts. We will now trace the parts of the blossom as they appear in the ripe apple, a section of which is given in figure 2, the letters used in figure 1 applying to the corresponding parts here. The calyx tube, *a*, is now the most conspicuous part, it having swollen in all directions in such a manner as to surround the stem, which now appears sunken in a cavity, *j*, and to bury the now insignificant calyx points, *b*, in

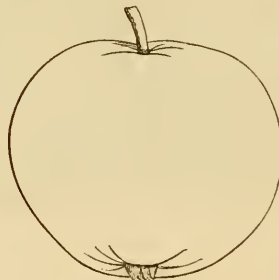


Fig. 3.—APPLE.

what is called the basin, *h*. The eatable portion of the apple is the calyx tube, which has not only increased many fold in size, but has undergone other changes quite as striking. In the flower it was green, hard and bitter, scarcely differing in its taste from a leaf or other green part. Now it becomes richly colored, mellow, juicy, contains an abundance of sugar, with a refreshing acid and a grateful aroma.—A wonderful chemist is the sun. Above we alluded to the calyx tube as being composed of five parts united together; we very often see apples with five wavy ridges upon them, and in one or two sorts five distinct lines may be traced from the eye to the stem. The ovaries, *f*, have also enlarged, and form the core, between which and the enlarged calyx tube, *a*, a well-defined line can usually be traced, especially if an apple be exposed to the air for a short time after it is cut. That portion of the core forming the cavity which contains the seeds becomes tough and parchment-like, and lines the cells, each of which contains two seeds. Enclosed by the points of the calyx, *b*, is a sharp depression, *i*, called the eye, and within this may usually be found the withered stamens, etc. The calyx end of the apple is then plainly the upper end, but as the fruit increases in size the weight is

more than the stem can support, and what is really the lower portion, the stem end, appears uppermost. In descriptions of apples, the size,

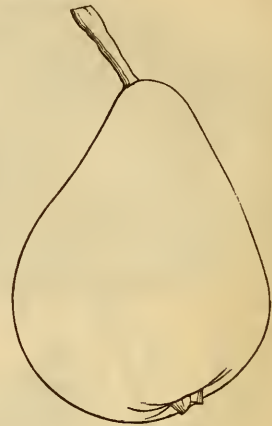


Fig. 4.—PEAR-SHAPED APPLE.

and shape, color, and other external appearances of the skin are first given, then the basin, *h*, is described; it may be deep or shallow, regular or furrowed; the eye, *i*, may be large or small, open or closed. The cavity, *j*, varies in depth and shape as does the stem in length and thickness. All these characters can be noticed upon inspection of the exterior. When the apple is cut open, the relative size of the core is noticed, and if, as often happens, the union of its parts is ruptured, it forms an open or hollow core, which is characteristic of some varieties. The shape and color of the seeds and the texture and flavor of the fruit are described by terms in common use. The pear does not differ structurally from the apple, except that the fruit tapers towards the stem instead of being sunken to form a cavity. There are some pears, however, that look exceedingly like apples, and we have seen malformed apples so like pears that their nature could only be made out by the character of the flesh. As an illustration of this we give in figures 3 and 4 two apples from the same tree, given us last summer by Mr. F. W. Woodward, of the Horticulturist.

Trees Away from Home.

Within certain limits we can readily say whether a tree will succeed or not in a given place. But with regard to the behaviour of trees removed from their native localities to a widely separated one of a not very dissimilar climate, we can not predict with any certainty, and we are constantly meeting with results that we can not explain, save by saying that the soil and situation do or do not suit the trees. The readiness with which foreign plants adapt themselves to new countries, and even crowd out the natives, is well exemplified in weeds—and a little observation will show that foreign trees seem to be quite as well adapted to our climate as the natives, if not better. We need only to quote the *Ailanthus*, *Paper-Mulberry*, *Silver Poplar*, and the *White and Yellow Willows* as familiar examples. Our nursery catalogues are mainly made up of foreign trees, as they are, as a general thing, more easily propagated than most of our own, and grow more rapidly. Among evergreens the two most vigorous growers and among the best for ornamental use as

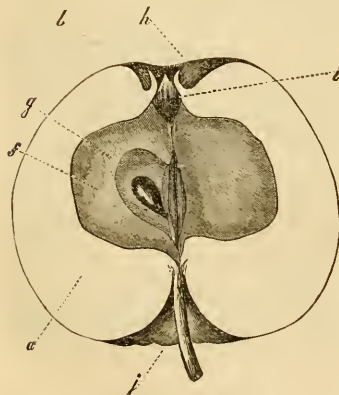


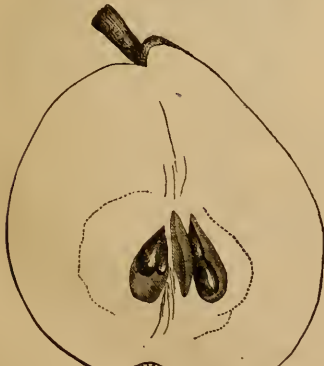
Fig. 2.—SECTION OF APPLE.

flower, and the numerous stamens with their yellow knobs or anthers will be seen just within the petals, and in the very center of the flower

well as for shelter, are the Norway Spruce and Scotch Pine, both, as their names indicate, of European origin. In California, a State noted for its great trees, it is said that an Australian Eucalyptus makes itself so much at home that it will probably be, before many years, the leading timber tree of that region. Even within narrower limits we find illustrations of the fact that trees seem better adapted to other regions than to those in which they are supposed to be native, and this has a practical bearing to cultivators. We recently saw in a part of Ohio, where the Red Cedar is not known in its wild state, trees of this species growing with such a luxuriance and grace of outline that we could hardly believe it to be the same as the slow-growing, stiff-looking Cedar of the Atlantic States. So with fruit. The winter apples of New England become fall apples in Ohio and Illinois, while their best keeping apples come from the places we should least expect—the Southern States. The Peck's Pleasant and other apples of New England at the West become so large and beautiful that when taken to the East pomologists are puzzled to recognize them. The Concord grape from Massachusetts only attains its greatest perfection beyond the Alleghanies. Leaving other trees out of the question we have yet much to learn about the adaptability of fruits to places. Every local society that keeps a well considered record is doing a good work, and if our American Pomological Society had done nothing but publish its tabulated fruit lists it would not have existed in vain. We hope that the forthcoming list will be made still more valuable by the subdivision of the larger States, and that both local societies and individuals will contribute their information to the general fund.

The Mount Vernon Pear.

Some specimens of this little known variety were recently sent us by Frost & Co., of the Genesee Valley Nurseries, Rochester, N. Y., who obtained them from W. S. Little, a nurseryman at the same place,—and we quite agree with them in the opinion that it ought to be better known. The fruit is said to have originated with the late Samuel Walker, Roxbury, Mass. It is of medium size, roundish-obovate, inclining



MOUNT VERNON PEAR.

to conic; basin shallow, a little wavy; eye small, open; stem stout, inclined, inserted with scarcely any depression, and often with a slight lip; skin of a bright cinnamon russet, with obscure minute dots of a lighter color; flesh yellowish, a little coarse, but very juicy, rich, and vi-

nous, with a delicate and agreeable perfume. Nov. and Dec. We are not informed as to the habit of the tree, but if there is nothing objectionable about that, it is strange that so good a pear should remain so long neglected.

The Cultivation of Horseradish.

In April last we published an article by Peter Henderson giving an account of the manner in which horseradish is grown in market gardens, where it is cultivated as a second crop to come on after cabbages or other early crop has been taken off. An account of the method of Mr. Kelsall, an extensive grower near Manchester, England, is given in the (English) Journal of Horticulture, and as this seems well adapted for growers in the small way, we give an abstract of the article. The ground is prepared by putting down a ridge of well decomposed manure, on each side of which a trench is cut, and the soil thrown up so as to cover the ridge of manure both on the sides and top—how high the ridges should be is not stated, but it is said: "The higher they are kept above the general level of the ground the better."

"The beds having been made as above described, the next proceeding is to prepare the sets. For this purpose Mr. Kelsall uses the long, small roots which grow out from the main plant; the longest, straightest, and cleanest of these are selected to form the future giant sticks of horseradish, and are prepared in the following way: Take the piece of root in the left hand, then with the right rub off all the eyes and young fibrous roots, leaving about a quarter or half an inch undisturbed at the largest end of each piece." * * * "In planting," continues the writer, "a piece of stick is pushed from the top edge of the bed in a slanting direction towards the middle of the bed; the sets are then placed in the holes thus made, but care is taken in performing this operation to place the pieces of root in the holes as straightly as possible. Care must also be taken to place the smallest or right end in the hole first, otherwise the order of things becomes reversed, and the root, or that portion of the piece intended to produce the future roots, will occupy the position of the crown. The piece of root should be pushed in about 2 inches further than the edge of the bed. The piece of root, or set, having been planted in this way, it will soon commence forming roots at the base, and these will at once search out the manure which has been placed in the centre of the bed. As soon as they have found it the set will increase in size to an extraordinary extent, and speedily a bud will break out from the other end, which forms the crown of the plant. When leaves appear, reciprocal action between the root and foliage is carried on energetically, and the plant is then matured with great rapidity. Scarcely a single root is formed between the crown and the base of the root-stock. Here there is a cluster of roots which have found their way into the manure, and the straightest and best of these must be saved for making future plantations. The set does not grow any longer after being planted, but increases in thickness to a wonderful extent, and, from the base to the crown, is white and perfectly free from roots." A bed like this can be readily covered with litter or manure, and the horseradish be accessible at almost any time during the winter.

To KILL APHIDES, OR PLANT LICE.—The veteran pomologist, Thomas Rivers, says: "For

aphides of all kinds, in-doors or out, winter or summer, 4 ounces Quassia chips are boiled ten minutes in a gallon of soft water, and while cooling, 4 ounces of soft soap dissolved in it. Many hogsheads of this are used here in summer, and always with effect. Sometimes two dippings of the shoots, or brushings of the under surface of the leaves, are required. This innocuous mixture has superseded filthy tobacco juice and many disagreeable compounds." It would be well to try this upon the aphid that is now so troublesome on the young shoots of cherry and other trees. As the preparation is unexpensive, it could be used on a large scale by means of a garden pump or engine.

Making Straw Mats.

Those who use hot-beds or cold frames can hardly dispense with straw mats for covering them. The usual way of making them is to lash straw in handfuls to cords stretched lengthwise for a warp. A correspondent, "N," of Milford, Conn., sends us his way of making the mats, which he considers easier and better. "Stretch the cords for the under side of the mat, (five is the usual number), lay on the straw, then stretch above the straw an equal number of cords, directly over the others. Then *sew* through the straw, catching the strings both ways, in the same way that brooms are sewed. To straighten the edges, lay a straight-edged board on the mat, stand on it, and with an axe chop-off the ends of the straw. By this method the straw is all laid on at once, and there are no seams to allow of the passage of air." The plan of Mr. N. looks practicable. In whichever way the mat is made, the straw should be laid on evenly, and at right angles with the warp. The but-ends of the straw should be placed at the edges of the mat, and the upper ends lap over in the centre, taking pains to keep the thickness uniform throughout. The making of mats is good work for stormy weather in winter, and they are of great utility in protecting plants from early and late frosts.

THE GOLDEN YEW—*Taxus baccata variegata*.—This is one of the few variegated evergreens that have a positive character, and is really fine. We think we never saw a more brilliant single specimen than one of these in the grounds of Parsons & Co., Flushing, L. I. The markings are of such a rich yellow, as to entitle it to be designated as golden. A charming shrub for a lawn, or to put in contrast with plants with dark green foliage. Unlike most variegations, this one is said to be harder than the species.

Another Comparison of Tomatoes.

Within the recollection of many of our readers, the tomato was a rarity. It is now a crop of such importance that it is a matter of no little interest to the cultivator to know which among the many varieties now offered by seedsmen is the earliest and most productive. We have already published some comparative trials, and as we wish to present all sides fairly, we give another, which differs in its results from those already given. Mr. W. H. Meadville, Penn., (an old subscriber, indeed, for he tells us he read the first number of the *Agriculturist*.) writes:

"I wanted to find out the best variety for our particular locality, (Meadville, Pa.) where the season is very short—shorter even than in some farther north. I experimented with the follow-

ing four kinds: Early York, Early Smooth Red, Tilden, and Keyes' Early Prolific. I weighed the products of each patch (of the several kinds) as they were picked from day to day, endeavored to keep an accurate account, and at the end of the season, (Oct. 1st, when a killing frost occurred), found the result to be as follows, *per plant*: Early Smooth Red, 2.5 lbs.; Tilden, 2.6 lbs.; Early York, 6.2 lbs.; Keyes, 10 lbs.

"This will probably be considered a very small yield for any of the varieties. I was surprised at it, having expected more, at least from the Tildens, with their large, fine looking fruit. But the difficulty with the Tildens and the Reds was not that they did not set enough of fruit, but that they did not ripen it up fast enough for our short season. On the last day of September, the vines were still green and flourishing, having an abundance of unripe and small tomatoes on them, and even blossoms. That night the frost came and swept them all away. The Yorks and Keyes, on the other hand, ripened up nearly all their fruit, and made no futile attempts to blossom out of season. The leaves were fading and dying before they were touched with frost at all. They did their work well, and having nothing more to do, prepared for death. I incline to think that the Yorks and Keyes are relatives, as they have several characteristics in common.

"I may remark that the seeds were all sown at the same time in the same hot-bed, about the middle of April, and set out the last week in May and the first of June. A part of each kind had been previously transferred to a cold bed about the 11th of May. They were treated as nearly alike as possible. I conclude, therefore, from this experiment, that, though the Keyes is not '30 days earlier than any other tomato,' and its leaves are not 'without odor,' it is nevertheless a valuable tomato, especially for a high latitude and a short season; and think that, if I live till another year, I shall plant more of it and less of some others, except for the sake of further experiment. Comparing the Keyes and the Yorks, the Keyes is a smoother, more handsome tomato, and less inclined to rot. I left some of them on the vines for two weeks after they were fully ripe; they wilted and shrunk, but did not rot. They are firm, with a tough skin, on which account they carry well to market, and keep well.

"My Tilden seed was genuine, obtained from Mr. Tilden himself. It may be a good tomato for a more favorable climate and a longer season, but is too slow for us. The first ripe tomatoes were picked from the Yorks and Reds. The Keyes' were a few days later; this has been due to richer soil and more shade. But once begun, they ripened up their whole crop in about four weeks, yielding more per plant in the first two weeks than either of the others."

WHY NOT A RHODODENDRON?—Those who live in cities and towns have usually but a small plot to embellish, hence the necessity of getting the most out of it. The fitting out of such places is too often left to the care of a jobbing gardener who has more conceit than knowledge, and a small front yard is so cut up and filled with a confusion of things that it looks still smaller. We recently passed a place that

struck us as particularly neat. A bit of nicely kept turf had in the centre a magnificent Rhododendron, six feet high, and nearly as wide. With its beautiful, broad, evergreen leaves, and an abundance of buds full of promise for next spring's flowers, it stood in marked contrast to the naked stems of the deciduous shrubs of the neighborhood. A single good plant like this will give more satisfaction than a crowd of shrubs, neither of which has a chance



MIGNONETTE.—(*Reseda odorata*.)

to develop itself. Good nursery grown Rhododendrons (and none others are likely to live) may now be had at from one to three dollars. They may be transplanted in spring or autumn.

The Mignonette and its Culture.

There is perhaps no flower that is so little attractive to the eye as the Mignonette, and yet there are but few so generally cultivated, not only by the florists, because "there is money in it," but in private gardens. It is so common that we were surprised some time ago to receive a letter, saying: "Do tell us something about Mignonette, how it looks and what it is good for." In looks it has nothing to commend it. The petals are so small they make but little show, and when in bloom the most conspicuous part of the flower is the brownish anthers. After the flower fades, the seed vessel grows rapidly, and unlike most seed pods it does not burst, but has an open place at the top through which the

seed can fall out when ripe. The engraving shows a branch with the small flowers, the conspicuous seed vessels, and the rather weedy looking foliage. The odor is to most persons very pleasing, though we have met with a few who disliked it. So much is the odor prized, that besides being grown largely in the open ground, the plant is one of those largely cultivated under glass to supply flowers in winter, and the most costly bouquet often owes its fragrance to this homely little flower.

It will grow readily in any common garden soil, and as it scatters its seed freely a stock is kept up without farther care; indeed plants from self-sown seeds are generally the strongest and best. It is to be sown where it is to bloom, as it is one of the plants that do not readily bear transplanting. By sowing in boxes or in pots at intervals the flowers may be had all the year round. The seed is sown in six-inch pots, and when the plants are large enough to handle they are thinned to six or eight, and when these get of good size, (as they are apt to die off from over-watering), they are thinned again to three. The variety called *grandiflorum* has larger flowers and spikes, the plant is more robust, and it is best suited to pot culture. What is called "Tree Mignonette" is not a distinct variety, but the plants, though usually regarded as annuals, are by proper treatment made to last for several years. To produce Tree Mignonette but a single plant is allowed to grow in a pot, and this is trained to a single stem, picking off the flower buds as they appear. When the plant has reached the height of 18 inches or two feet, its top is pinched and its branches are encouraged to form a bushy head. When the desired shape is established, which usually takes a year or more, then it is allowed to flower. The duration of the plants is much prolonged if they are not allowed to ripen seed. In house culture Mignonette does better in a moderately cool room than in a warm and dry one; indeed, the plant is hardy enough to bear considerable frost without serious injury. It should have air whenever the outside temperature will allow of it, and care should be taken not to over-water the plants. The Mignonette is a native of Southern Europe; its botanical name is *Reseda odorata*. Its generic name is from the Latin *resedo* to calm, in reference to its supposed medicinal qualities.

THE SPORTING OF FRUITS.—In previous numbers record has been made of some remarkable instances of sporting in fruits, and we gladly receive any examples of these deviations from the original form, as we believe if the fact proves to be one of common occurrence, it will explain many of the differences we see in fruits, especially among grapes. Last autumn, Mr. F. F. Mercer, of Catawissa, Pa., brought to our notice a sport of a grape vine, which is worthy to be recorded. On a vine of Loomis' Honey, a berry much like the Isabella in size and shape, one branch has for several years borne a large, round grape, looking much like a well-grown Black Hamburg. The sport ripens at a later date, and is without the marked sweetness that characterizes Loomis' Honey. We have before noted remarkable sports in the Catawba and Black Hamburg grapes.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Lap Robes and Picture Frames.

EXTRACTS FROM THE PRIZE ESSAY BY MISS EVA M. COLLINS, ROCHESTER, N. Y.

Some time ago we sent a number of things away to be colored. We sent the wool requisite for family use to the factory to be spun into yarn. As Ralph was about starting with the fleeces, it oc-

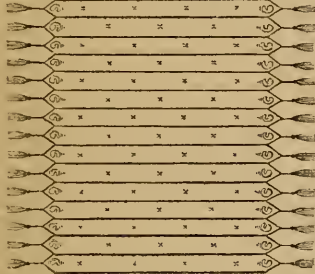


Fig. 1.—LAP ROBE.

carried to me, as grandmother repeated to him some special instructions concerning a part of a fleece which was to be very coarse for oversocks, that coarse, slack-twisted yarn from fine wool would make a capital lap robe. It could be colored as brightly as zephyr, would be warmer, more durable, and no more expensive than a horse blanket. I could knit it in Afghan stitch, in long strips, and crochet them together, and the robe could be as long and as wide as I pleased to make it. How nicely it would look in our large new cutter, and how comfortable it would be, especially when the front seat was in, and both the good buffalo robes were used in front! But Ralph was starting. "Oh! father, call him back." "Halloo, Ralph!" "What is it child?" "Oh! father, put in another fleece. I want to make a lap robe. Can you spare one more?"

"Wait Ralph, here is an errand for your little finger, and I expect we shall turn out in fine style next winter."—There is the lap robe complete, (fig. 1)—fifteen strips, four inches in width, and four feet in length—seven of them black, four scarlet, two green, and two orange, put together with scarlet. Katie embroidered a palm-leaf near the points of each strip, fig. 2, as fast as completed, and Jennie made the tassels to correspond. [A palm-leaf in embroidery is nothing like a natural palm-leaf—

it more resembles a crazy letter G than anything else, and our artist supposing that it was a very bad G, made his drawing accordingly.—Ed.] About every nine inches we put in a star in zephyr, in colors contrasting with the strips upon which they were worked, to preserve an agreeable harmony of color. Desirable colors not indicated by the colored strips were used to advantage upon the black, alternating with the stars upon the colored strips. Father and I have been initiating the robe into the mysteries of active service, or rather ourselves into sailing under such gay colors with sobriety.

Our "Shaksperean Reading" comes off to-night, and will be at our house for the first time. We begin "Brutus" alias "Julius Caesar," to-night. Father and I stopped at the rectory and found our rector, Mr. N., and the gentlemen who are to read the parts of Cassius, Antony, Julius Caesar and Cæsar with their Shakspereans. Mr. N. is Brutus. He is our most correct reader, and whenever he will consent to it, he is made the hero of the play. We meet every fortnight, and read only one act in an evening. Two miscellaneous readers are appointed, each limited to twenty minutes, and several are designated to furnish the music. Father bought an engraving of Carpenter's "Signing of the Emancipation Proclamation" a few days ago, and as I am to read for one, I intend, if our President does not think it out of order, to spend my twenty minutes upon an explanation of the picture, with some extracts and anecdotes from Carpenter's book. The picture looked desolate all alone after it was hung. It was all there to be sure; but there were so many legs, and coats, and arms, as to become wearisome, before it was possible to get into the spirit of the tableau, at least so it seemed to me last evening, as I was studying the scene in view of to-night; but it is all right now. Something is needed above the picture. I would hang my little head of Christ there, only the engraving is so exquisitely fine, the "Cabinet" would look coarse in comparison. The better way will be to bring down the frame I made for Charlie's photograph from my room for to-night, and let Washington preside. The way I made the frame is quite a good one for variety. It is made of gilt paper, which comes in large sheets, one of which is sufficient for three frames like one in fig. 3. The outer row of points is made from strips half an inch in width, cut into pieces two inches in length. The strips used for each of the other rows are a trifle narrower and shorter than for the row immediately outside. Double the paper down first from the left, as in fig. 4, and then from the right, as in fig. 5, and sew each row of points, beginning with the outer one, upon an oval cut from an old box cover, fig. 6. The inner row of points is a piece of the gilt paper upon which points are cut neatly, and pasted over the last row of stitches, fig. 7.



Fig. 7.

Department at Table.

A mother wishes to know what she shall do to secure agreeable manners in her children at table. There are probably a good many mothers among our readers pressed with the same solicitude. Good breeding shows itself at the table more than elsewhere, for here we come to gratify an animal appetite, and without some painstaking to redeem its coarseness the repast is likely to be purely an animal exercise. Children learn more readily from example than from precept, and unless the parents are agreed in having a little formality at the table, it will be impossible to form decorous habits in the children. If the parents will observe the rules of good breeding themselves, there is very little difficulty in training the children. It helps the matter very much to have the table set in an orderly manner. Every article to be used upon the table should have its place and be in it at the beginning of the meal. It is a terrible annoyance to any well bred person to have a perpetual running to the pantry or kitchen for some forgotten article. Then neatness in the appearance of the table helps neatness and order in the children. Clean table-cloths and napkins are contagious somewhat. The meals should be at fixed hours, and punctuality at the table should be insisted upon. Nothing should be allowed to intrude upon the time allotted to meals. It should be made a time of leisure and social enjoyment. Mental care and haste disturb digestion and make dyspepsies. There should be a few rules observed in good soci-

ety laid down and enforced so early that the child will have no remembrance of a wrong way of using his knife and fork or handling his cup or goblet. Politeness is always to be insisted upon, and brothers and sisters should be made to study each other's happiness. This will make them agreeable in larger circles. Politeness often contributes more to one's success in life than brains or capital.

Foot Warmers.

Many people suffer more in the winter from cold feet than from any other cause. The feet are easily kept warm while exercising, but in a sitting posture, while riding in a carriage, or at home, there is much inconvenience and exposure to taking cold. For invalids it is especially important that a good circulation of the blood should be kept up at the extremities. Those ancient and time-honored devices to remedy cold feet, the junk bottle and the stone jug filled with hot water, often led to petty disasters, more vexatious than perils. The corks would fly out or get loose and make a bad matter worse. Yankee ingenuity has improved upon these primitive inventions, and we have in fig. 1 a vessel holding about two quarts of water, quite as conven-



Fig. 1.—STONE-WARE FOOT WARMER.

iently handled as the bottle, and the cork inserted upon the top so that if it fly out under pressure of steam there is no danger of leakage. This is a very

convenient article for the bed of an invalid or for the carriage in a cold day. Fig. 2 is another form of the same article. It presents a larger surface to

the feet and is more convenient for use while sitting. If wrapt in cloths or sheepskin with the wool on, it will retain its heat for a long while. The heated stone or brick has been improved upon by cutting slabs of soap-stone into convenient sizes, and putting handles upon them. They are much neater in appearance, and are always at hand. Fig. 3. Aside from the suffering which these articles prevent, there can be no doubt of their usefulness even for those in health. It is much better for a robust man to ride with comfortable feet, than to be benumbed with cold. It is by timely attention to little things that the health is preserved.

Gems or Aerated Rolls.

The only convenient article for cooking Gems is a French roll pan for baking, shown in the engraving, and we cannot warrant success in anything else. The pans are made of cast iron, and can be had at the large



FRENCH ROLL PAN.

hardware and furnishing stores in the cities at about \$1.50 per dozen, and 75 cents single. Put the pan upon the stove, heated nearly to redness. Take one cup of water, one cup of milk, and three cups

of flour, of the best quality. Stir in the flour gradually, and with a spoon beat the mixture five minutes briskly. The object of the beating is to get as much air as possible into the batter. Put a piece of butter of the size of a pea into each of the moulds, and fill about two-thirds full with the batter. Put immediately into a very hot oven, and bake for twenty minutes, or until nicely browned.

This form of unleavened bread is the best article for breakfast or tea we have ever found in that land of good housekeepers, Eastern Connecticut. It is exceedingly light, palatable, and nutritious, excellent for invalids and dyspeptics, and quite as good for people in sound health. They are so nice that we hope our readers will try the article for themselves. We bear no ill-will to the hop growers, or the vendors of soda, saleratus, and other salts, but we have no doubt that the Gems once introduced into a family would greatly diminish the use of these unwholesome articles in cookery, and help to promote health and good digestion.

Comfort for Housekeepers without Help.

Mrs. E. E. K. O., of Illinois, writes us, in an account of one day in her family. "My neighbor was in and said she had made a whole dress to-day. She has no help and has as many in her family as I have. I have a washing machine, a wringer, and woman to wash, and a sewing machine. I can easily get some one to come and make up new garments, but no one to mend. I really like to mend, and it is possible I spend more time upon an old garment than it is worth. Intelligent domestics that know how house work should be done will not go out to service unless they are obliged to, and I prefer doing my own house work to having poor help. Girls think that their ideal husbands will never look into a kitchen for a wife. I suspect it is better for my children, perhaps better for me, to be without help. They try to wait upon themselves and to help me more than they would if I was less pressed with cares. I think I see an improvement in them since I gave them those two little books in which I write down their deeds both good and bad. They help me many times, that they may have the kindness put to their credit in the book, and check rising anger that it may not be set down against them. Exchanging work with them and rewarding them encourages their industry. Yesterday Anna washed the dishes, and in the evening I made her doll a dress. Orin picked up a basket of chips and brought them in, and I told him about the Israelites crossing the Red Sea. He works with great alacrity when I promise to tell him a Bible story."

The topic touched upon by our correspondent is one of very great importance in all our families. The training of children to industrious habits is much more likely to be well done in a family where necessity is laid upon the parents to work. The curse is in a measure taken off from toil where it is shared by a mother's love. Children come to love the labors of the household for the sake of lightening her burdens. The child's view of washing, cooking, and mending, is very much affected by the person tied up to these duties. If Bridget is always associated with the wash tub and the cook stove, a little of Bridget's coarseness attaches to these household offices. If mother does these things they are redeemed from all vulgar associations. There is nothing pertaining to house-keeping that the daughter may not learn with honor. She will be eager to master the mysteries of the kitchen, without suspecting that she is any less a lady for the knowledge. Society is suffering so much for the want of good housekeepers and servants that we think mothers ought to welcome almost anything that will make their daughters thoroughly skilled in domestic duties. Very much of the trouble with servants arises from the fact that the housekeeper does not understand their duties, and so is not reasonable in her requirements. She is not at home in the kitchen, and there are no common sympathies between her and her servants. A woman well trained in her early home not to despise any useful office seldom fails to make a good

wife and mother, and to have a happy, well-regulated family. Our correspondent takes a comforting view of "the situation," and is pursuing the right course with her children. We especially like her devices of keeping account with them, and of exchanging work. Such a course will encourage self-restraint and promote industrious habits.

A Picture in the Backwoods.

The cars ran off the track and we were detained two hours near a log house. It was in the midst of a corn field, in a clearing made a dozen years ago or more. There was no carriage road passing it, and we suspect the family owned nothing but a cart that went on wheels. Yet the man owned a farm of eighty acres and valued it at fifty dollars an acre. It was good land and yielded bountifully. In the main room of the dwelling, which answered for parlor, sitting-room, and lodging-room, sat the wife and mother bare-footed, with a pipe in her mouth, and sewing in her lap. Near her sat a married daughter with the same attitude for the feet, rocking the cradle. In the ell, where the kitchen work was done, stood another grown-up daughter with bare feet, mixing the corn meal dough for the evening meal. There was not the slightest indication of embarrassment at the dishabille. The ladies of the household were manifestly in the habit of receiving calls in that style of dress. There was no carpet upon the floor, and never had been. There were no pictures upon the walls, no books upon the shelf, no ornaments about the room, nothing that did not contribute directly to man's physical wants. There was no yard about the house, either in front or rear. There was not a fruit tree in sight, not a tree for shade about the dwelling, not a flower, not even a Nasturtian growing under the window. There was a shed in the rear, of the rudest pattern, where flour, corn meal, and the meat barrels, were sheltered. There was a log barn, with a stall or two in it, and a place for hay and corn. Beside these, there was no other convenience about the dwelling to indicate that man had other wants than the brutes. Yet here two human beings had lived for half a generation and reared a family of children, as rude, as ignorant, as destitute of taste, as themselves. We come at some truths best by contrast, and it cannot fail to profit some of our desponding readers in cheerful homes to study this way-side sketch of a dwelling in the clearings.

A Home-made Coal Sifter.

When anthracite coal is burned, there is often a great deal of waste. The sifting of the refuse of the grate or stove is by no means a pleasant operation, and it is often, especially where there are servants, thrown away, and thus a considerable amount of fuel is lost. Quite a number of contrivances, most of them patented, have been devised for facilitating the process of sifting, some of which answer the purpose very well. A correspondent, E. J. P., sends us from Milford, Mass., a plan of an easily built, home-made sifter, that has the merit of being cheap and apparently efficient. The materials required are an old flour barrel, a coarse sieve, a piece of one-sixteenth-inch wire, and an old broom-handle. Bore holes just above the second hoops of the barrel, and put two pieces of wire across it; clinch these on the outside so that they will make a firm place for the sieve to rest upon. Midway between the wires bore two $1\frac{1}{2}$ inch holes on opposite sides of the barrel; saw two notches in the broom-handle, just wide enough apart to receive the edges of the sieve. Put the broom-handle through the holes in the barrel, set the sieve in the notches cut in the stick, put on some kind of a cover over the top of the barrel, and the thing is ready. By pushing the stick backward and forward, the sieve slides upon the wires, and the sifting is done with ease and without dust. The ashes are a nuisance in towns, but in the country they are useful for walks, and as an absorbent in privies.

Recipes for Cooking.

The following are contributed by Mrs. D. W. Sutton, Westchester County, N. Y.

Bread.—Sift into a good sized wooden bread bowl a quantity of flour, say seven pounds, make a hole in the center of the sponge, (or in winter, some prefer setting the sponge in the tray of flour), or if the sponge is quite cold, and you wish to hasten the process, put in warm water or milk, a little hotter than it would do to set the sponge in. Thicken it up with flour until cool enough to receive the sponge; then add a handful of salt, then the sponge. Stir the flour around from the inner edges with a spoon, until a tolerably stiff batter is formed, knead until perfectly clean and smooth, and if kneaded several times, it is finer grained. A small lump of butter or lard rubbed into the flour, while it is dry, makes a nicer crust. In hot weather the batter should be made of cold water, especially if set over night, which is a good plan, preparing it about bedtime. When light again after kneading, mould into loaves and put into greased pans; cover and let it rise the third time. When light, prick the loaves, to prevent cracking, and bake in a hot oven. Care should be taken that it does not get chilled or scalded. If it threatens to be sour from the yeast, or heat, dissolve a small portion of soda, and incorporate it thoroughly. It is thought to be a great improvement by some to add a small quantity of mashed potatoes; others add a small quantity of warm Indian pudding.

2. Rye Bread is varied but little in process from the above. It is preferable to set wheat or middlings for the sponge, add a piece of butter or lard, mix most entirely with a spoon, then make into loaves, and put into well greased pans to rise. It requires longer time to bake, and a brick oven, and if it remain in the oven until cold, it is improved.

3. Turnpike Yeast Cakes.—Make good, fresh scalded emptings, as in Nos. 1 and 2, then boil up hops, about a double handful, in about two quarts of water, with several sweet apples sliced, and a handful of peach leaves if convenient. Pour this liquor scalding hot, and strained, over about enough Indian meal to thicken; when cool, mix about a quart with the light, fresh yeast, and when light again, thicken stiff with more meal, and make into rolls about as thick as a rolling pin. When a little light again, cut off in cakes not quite a half inch in thickness, and dry in the shade. This is more convenient to make into cakes than either to roll out and cut, or to form with the hands. It may be dried in crumbs if preferable. Great care should be taken after it is thoroughly dried, to put in a tight bag and keep in the dark. Though good for a year, it is better to make it every six months in dry weather. For use, soak a cake until it will crumble up fine, and mix with a quart of warm water, thickened with flour.

Pumpkin Yeast.—Boil a pumpkin soft, and mash fine, and thicken it with Indian meal and a handful of salt; when cool, add two cups of yeast. This is very convenient and nice for winter, as it will keep four months or more in winter if kept in a cellar where it will not freeze. All yeast should be kept where it will not freeze in winter.

Bottled Yeast.—Boil down one quart of hops in two quarts of water, one-half; boil and mash 12 potatoes to add to this liquid; add one cup of sugar, a tablespoonful of flour, one-half cup salt.

Rye and Indian Bread.—Two parts of Indian meal to one of rye; put the corn meal into your bread pan, with a little salt and molasses, wet it with scalding water, and be sure that it is scalded, working it at the same time with a spoon. When lukewarm add the rye, a cupful of good yeast, and mix it up with water not very stiff, knead it into loaves, let it stand to rise, and bake in a moderate oven.

Buns or Rolls.—Thicken one quart of warm water or milk, add a little salt, one half cup of melted butter, and one cup of good yeast; make into buns for morning, or into an oval roll, and draw a deep cut. If not very light, add a little soda.

BOYS & GIRLS' COLUMNS.

"A Happy New Year."

We believe that the good wishes which flow so freely from every one's mouth at the beginning of the new year are earnest and sincere. Few persons desire that others shall be unhappy. We know that as these lines are penned, the heart of the writer goes out lovingly toward the hundreds of thousands of young friends who will read them. Boys and girls in the forests of Maine, with cheeks rosy from the salutes of Jack Frost, or large hearted and bright as the prairie flowers in the great West, or sunny and glad among the savannahs of the South, or more precious than the shining sands of your own golden California—yes, those too, away up in Sitka, where the Russian Bear has just retired before the American Eagle, "A Happy New Year" to you all. We can hear the echo coming back, and it gives us great joy. We have had pleasant times together during the past. Your letters filled with cheering words have encouraged our labors for your amusement and instruction, and stimulate us to make the coming year still more enjoyable. New puzzles, fine engravings, good stories, and kind words, are in store for all who will belong to our circle. Our engraving on the opposite page is intended to bring to mind the sorrowing as well as the joyous. Homeless ones wander in the streets of our cities—do what you can to relieve them. Many are disappointed of their holiday gifts,—try to console them, and as you enjoy the merry sleigh ride, think of those perishing upon the stormy ocean and pray for them. Would you be happy this year? Learn this lesson by heart and by practice: *He enjoys himself most who does most to bring enjoyment to others.*

Work or Starve.

This is the law and the penalty from which there is no escape. Thousands are trying to evade it; some by making their fellow men work for them, others by depending on money inherited or accumulated in former years, but without avail. If idle, they starve in the midst of plenty. They may eat to the full, but eating without exercising is against the law of Nature, and very soon the stomach refuses to digest the food, the body is not nourished, and the man literally starves though he may feel no hunger. The hands, the brain, and the heart must work to live. If you dodge the labor of learning lessons, you at the same time miss the strength of intellect which mental work brings, and the mind will pine for want of nourishment. Thousands have starved their wits in this way, until they wonder how it is that others carry away all the prizes in life. Many starve their hearts by never exercising them with noble emotions. Selfishness eats into the nature, leaves a canker, leaves the man hungry for affection, but love is the price for love, and he that will not work in this field must accept the penalty. It is an error to think that work was a penalty imposed on man for having violated God's command. Man's nature is such that activity is the law of his being. Every muscle and nerve calls for employment that it may remain in health, and there can scarcely be a more terrible punishment than solitary confinement, where the eye, the ear, and the hands must remain idle. A slow, painful death will surely result. So then, boys and girls, strive to love work and not to shun it. Though you may be as rich as Astor or Stewart, in money, yet your own nature will suffer the pangs of poverty without active exercise.

A Look at the Moon.

The "Man in the Moon," if there is such a person, can not enjoy life very highly, if his nature is like that of the inhabitants of the Earth. The most careful examinations of astronomers and philosophers give evidence that there is neither air nor water in the moon. If these be wanting, of course vegetation, such as we have, can not exist, and human beings would find no subsistence. Yet men of science have not learned all of Nature's secrets, and some future Herschel or Newton may be able to prove that every want of animated beings can be fully supplied by what is produced in the moon. One astronomer claims to have discovered traces of vegetation there. He declares that there are spots of a greenish tint which appear and disappear at regular seasons, as though spring brought its growth and winter destroyed it. But the most careful explorers of that distant region, with the best telescopes, describe the surface of the moon to be a scene of the wildest desolation. Lord Rosse's telescope gives a view such as would be seen at a distance of from 120 to 150 miles. Immense mountain ranges surround vast pits or caverns, which are strewn with huge blocks. The mountain peaks are from 5,000 to 25,000 ft., or one to four miles high. The appearance is as though volcanoes had convulsed the planet and left it desolate. Yet we can speak only of one side of the moon, as she revolves around her axis in the same time she completes her revolution around the earth, and when she is between us and

the sun, of course her dark, unknown side is toward us. What that contains can only be imagined. Here is a fine field on which some poet may exercise his fancy, and give us descriptions of fairer scenes than earth contains.

A Great Work.

Those of our young readers who have visited New York will remember the water called the "East River," which separates the city of Brooklyn from the former place. Ferry boats at ten different points connect passengers, teams, etc., back and forth. As a very large number who live in Brooklyn have their places of business in New York, there is an immense tide of travel on these boats. For several hours, morning and evening, a densely packed crowd is usually found on almost every boat. This is especially the case when from any cause a boat is detained from its regular trip. During fogs on the river, or while navigation was obstructed by ice, we have seen thousands of persons, and long lines of vehicles waiting their turn, and when a boat arrived, a fearful rush has been made to get places. The sinking of a boat at such a time would be a terrible catastrophe, as hundreds of lives must be lost. The citizens of Brooklyn, finding matters growing worse every year, last winter determined to build a bridge to connect the two cities, and the work has already been commenced. It is to be made of wire. Huge cables of many strands will be stretched from shore to shore, and fastened at either end to massive towers of stone work. The towers are to be high enough to raise the bridge one hundred and thirty feet above the water, so that the largest ships can sail under it. In order that teams and passengers may reach so high a point to cross on the bridge, it will be necessary to commence the roadway hundreds of feet back from the river on each side. It is expected that the City Hall Park will be the point of beginning on the New York side, and a place about equally distant from the stream on the Brooklyn side. It is intended to make the bridge wide enough for railroad tracks as well as other vehicles, so that passengers will be enabled to pass by the horse cars from point to point, in almost any part of the two cities. The bridge will require some three years for completion, and its entire estimated cost is about \$5,000,000.

Difficulties in Forging.

Writing masters try in vain to make their pupils all exactly imitate the copy. Each one will make his own peculiar stroke, differing in slant and shade from the pattern, and also differing from the marks made by any one else, and thus a person's handwriting is his own special property, which another cannot well borrow or steal. Nature is wiser than the schoolmasters. If their plan could prevail, and every boy's hand could be trained to move in similar tracks, bank checks, notes, receipts, wills, and all other written representations of property would soon be worthless, for no one could then detect forgery. It is not very difficult to write somewhat like another, so as to deceive a careless observer, but there is one difficulty which forgers can never fully overcome. No man ever signs his name twice exactly alike. There will be a slight change of curve or slant or shade through almost endless variations. So that if a forger makes an exact copy by tracing his letters on paper laid upon the copy, the perfect likeness at once shows the fraud. If he attempts to put in slight variations, these, being original with himself, will follow his own peculiar style, and thus enable an expert to perceive the forgery, and sometimes to trace its author. A very important "will" case, involving millions of dollars, recently brought out this fact in a remarkable manner. A signature to a codicil added to the will was declared to be a forgery, because it exactly corresponded with the first signature to the will. Professor Pierce, the eminent mathematician, testified that it could be mathematically demonstrated that the chances of a person's so exactly repeating his own signature were in the almost inconceivable ratio of one to 2,666,000,000,000,000,000,000, or next to an impossibility.

What the Clock Said.

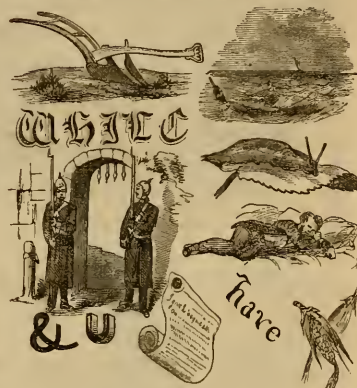
A large, old-fashioned clock stood in the hall, not far from the room where James S. slept. He was often soothed to sleep by its steady tick, tick, and awakened in the morning by its clear ringing strokes. He had often wished to examine the inside of the case and find out "what it would do," if he pulled the strings he saw hanging there, when his father opened it to wind it up, but his parents had forbidden him to touch it. One day his father and mother were out, leaving him alone. "Now is my time," thought James, and he softly opened the door and gave one of the strings a twitch. R-r-r-r-r went the alarm, frightening him half out of his senses. He hastily shut the door, but the alarm rung on, and just then his mother came in. "What have you been doing to the clock?" said she. But James denied that he had touched it, and as he had never been known to tell a lie before, his mother believed him. At night he went to

bed, as usual, but when saying his prayers, he thought of the clock, and its "tick, tick," slow and solemn, troubled him. He got into bed and tried to go to sleep, but could not help listening to the clock. Soon its voice seemed to change, and instead of "tick, tick," it said to James: "You lied!"—"you lied." He listened to it until he was really frightened, and could bear it no longer. He got up hastily, ran to his parents' room, and confessed his sin. "He was freely forgiven and returned to his bed in peace. Now the clock's voice seemed to change again, and soon he went to sleep hearing it say: "Did right!"—"did right," and its voice never sounded pleasanter.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the December number, page 435. No. 259, *Labyrinth*.—Keep the right road, and you will find wealth.... No. 290, *Illustrated Rebus*.—Indescribable ecstasy belongs to all those who, in the end, overcome sin and the flesh, the world, and the devil. The following have sent in correct answers: Sandford Horton, S. T. Adams, B. C. Burt, W. S. & F. R. Hyer, J. J. Stocklin, A. G. McComb, "E. F."

New Puzzles to be Answered.

No. 291. *Illustrated Rebus*.—An old piece of advice.No. 292. *Illustrated Rebus*.—An old and true proverb.No. 293. *Puzzle Picture*.—Misfortune of a benefactor.No. 294. *Illustrated Rebus*.—Worth looking into by all.



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HOLIDAYS AT HOME AND ABROAD.—Drawn and Engraved for the American Agriculturist.

(Business Notices \$2.50 per Aerate Line of Space.)

Exposition Universelle.

The intelligence and judgment of the Imperial Commission in the matter of awards are clearly evinced in the following extract from

The Exposition Universelle Illustrated.

("Publication authorized by the Imperial Commission"):
"By their skill, universally recognized, Messrs. Wheeler & Wilson added to Howe's system of sewing machines important modifications, which have placed them in the front rank of manufacturers.

"The gold medal which has been awarded them affirms, moreover, that none of the machines from the workshop of Howe, or of his principal tributaries, unite the qualities of simplicity and solidity of mechanism by which these machines are distinguished above all others.

"To their machine, remarkable for its form and elegance, they have substituted for the shuttle of Howe a small flat disc which revolves vertically with unvarying swiftness. Hence this machine is the most simple of all, and notwithstanding its great precision in operation, its price is not above that of the most imperfect systems.

"Elegance, perfection of work, simplicity, solidity of mechanism, and facility of management, such are the essential qualities united in the Wheeler & Wilson machine, constituting a superiority which the jury has with unanimity recognized and proclaimed.

"To these gentlemen the gold medal was awarded as *manufacturers of machines*; to Mr. Elias Howe a similar medal was awarded as *propagator*. The distinction made by the jury explains itself.

"The original machine of Thimmonier only needed to pass into the skillful hands of Wheeler & Wilson, to receive its highest perfection. To-day, thanks to its cheapness, their machine is accessible to all. Its simplicity assures it not only a place in the chamber of the seamstress, but its elegant form wins its admittance into the most sumptuous parlor."

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(Continued from page 30, which see.)

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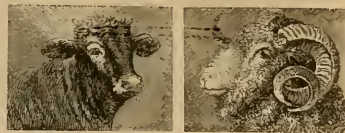
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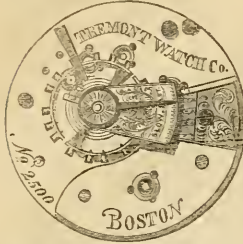
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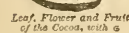
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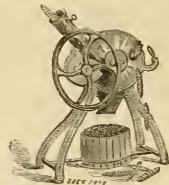
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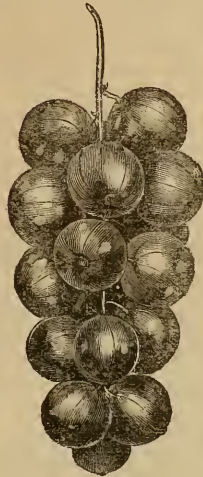
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DRAINING FOR PROFIT

AND

DRAINING FOR HEALTH.

By GEO. E. WARING, JR.,

ENGINEER OF THE DRAINAGE OF CENTRAL PARK, NEW YORK.

Illustrated.

TABLE OF CONTENTS:

LAND TO BE DRAINED AND THE REASONS WHY.—Indications of the need of draining.—Sources of water.—Objections to too much water.—Wet sub-soil.

HOW DRAINS ACT AND HOW THEY AFFECT THE SOIL.—Characteristics of well laid tile drain.—Surface-water and rain water beneficial, springs and seepage water injurious.—Cracking of stiff clays.—Evaporation and filtration.—Rain fall.—Evaporation.—Temperature.—Drought.—Porosity or mellowness.—Chemical action in the soil.

HOW TO GO TO WORK TO LAY OUT A SYSTEM OF DRAINS.—Amateur drainage.—Maps.—Levelling Instruments.—Outlets and location of drains.—Main drains.—Spring water.—Fall.—Tiles.—Depth and distance apart.—Direction of laterals.—Collars.—Discharge of water from drains.

HOW TO MAKE THE DRAINS.—Tools.—Marking the lines.—Water courses.—Outlet.—Silt Basins.—Opening the ditches.—Grading.—Tile laying.—Connections.—Covering the tile and filling in.—Collecting the water of springs.—Amending the map.

HOW TO TAKE CARE OF DRAINS AND DRAINED LAND.—Removing obstructions.—Mistake of substituting large tiles for small ones which have become obstructed.—Heavy lands should not be trampled while wet.

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ESTABLISHED 1861.

THE GREAT AMERICAN TEA COMPANY

HAVE JUST RECEIVED
TWO FULL CARGOES
OF THE FINEST NEW CROP TEAS.

22,000 HALF CHESTS by ship *Golden State*.
12,000 HALF CHESTS by ship *George Shotton*.

In addition to these large cargoes of Black and Japan Teas, the Company are constantly receiving large invoices of the finest quality of Green Teas from the Moyne district of China, which are unrivaled for fineness and delicacy of flavor.

To give our readers an idea of the profits which have been made in the Tea trade, we will start with the American houses, leaving out of the account entirely the profits of the Chinese factors.

1st. The American house in China or Japan makes large profits on their sales or shipments—and some of the richest retired merchants in the country have made their immense fortunes through their houses in China.

2d. The British and other foreign agents profit upon the foreign exchange made in the purchase of Teas.

3d. The Importer makes a profit of 30 to 50 per cent. in many cases.

4th. On its arrival here it is sold by the cargo, and the Purchaser sells it to the Speculator in invoices of 1000 to 2000 packages, at an average profit of about 10 per cent.

5th. The Speculator sells it to the Wholesale Tea Dealer in lots at a profit of 15 to 25 per cent.

6th. The Wholesale Tea Dealer sells it to the Wholesale Grocer in lots to suit his trade, at a profit of about 10 per cent.

7th. The Wholesale Grocer sells it to the Retail Dealer at a profit of 15 to 25 per cent.

8th. The Retailer sells it to the Consumer for ALL THE PROFIT he can get.

When you have added to these **eight** profits as many brokerages, cartages, storages, cooperages and wastes, and add the original cost of the Tea, it will be perceived what the consumer has to pay. And now we propose to show why we can sell so very much lower than other dealers.

We propose to do away with all these various profits and brokerages, cartages, storages, cooperages and wastes, with the exception of a small commission paid for purchasing to our correspondents in China and Japan, one cartage, and a small profit to ourselves—which, on our large sales, will amply pay us.

By our system of supplying Clubs throughout the country, consumers in all parts of the United States can receive their Teas at the same price (with the small additional expense of transportation), as though they bought them at our warehouses in this city.

Some parties inquire of us how they shall proceed to get up a Club. The answer is simply this: Let each person wishing to join in a Club, say how much tea or coffee he wants, and select the kind at price from our Price List, as published in the paper or in our circulars. Write the names, kinds, and amounts plainly on the list as seen in the Club Order published below, and when the Club is complete send it to us by mail, and we will put each party's goods in separate packages, and mark the name upon them, with the cost, so there need be no confusion in their distribution—each party getting exactly what he orders, and no more. The cost of transportation the members can divide equitably among themselves.

Parties sending Club or other orders for less than thirty dollars had better send Post-office Drafts or money with their orders, to save the expense of collections by express; but larger orders we will forward by express, to collect on delivery.

Hereafter we will send a complimentary package to the party getting up the Club. Our profits are small, but we will be as liberal as we can afford. We send no complimentary package for Clubs less than \$30.

Parties getting their Teas of us may confidently rely upon getting them pure and fresh, as they come direct from the Custom House to our Warehouses.

We warrant all the goods we sell to give entire satisfaction. If they are not satisfactory, they can be returned at our expense within 30 days, and have the money refunded.

The Company have selected the following kinds from their stock, which they recommend to meet the wants of clubs. They are sold at cargo prices, the same as the Company sell them in New York, as the list of prices will show.

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OOLOONG (Black), 70c, 80c, 90c, best \$1.10.
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IMPERIAL (Green), 80c, 90c, \$1, \$1.10, best \$1.25 per pound.
YOUNG HYSAN (Green), 80c, 90c, \$1, \$1.10, best \$1.25 per pound.
UNCOLORED JAPAN, 90c, \$1, \$1.10, best \$1.25 per pound.
GUNPOWDER, (Green), \$1.25, best \$1.50 per pound.

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Consumers can save from 50c. to \$1 per pound by purchasing their Teas of the

GREAT AMERICAN TEA COMPANY,

Nos. 31 and 33 VESEY STREET.

Post-Office Box, 5643, New York City.

EVIDENCE AFTER A YEAR'S TRIAL.

Treasury Department,
Washington, Dec. 1, 1867.
Inclosed herewith I send you our regular list for December. It is now twelve months since we began the use of your Teas and Coffees, and I am pleased in being able to say that the satisfaction derived from the use of said articles by the members of this club, instead of being confined to individual instances, is universal and, I think I may safely say, without exception. Thanking you for the many favors received at your hands, I am, sir, very respectfully, your obedient servant,

L. CASS CARPENTER.

Saco, Mass., May 6th, 1867.

To the Great American Tea Company,

31 and 33 Vesey Street, New York.

Gentles—The order I sent you on 23d April for Teas came safe to hand on the 1st May, and the amount, \$9.15 was forwarded by M. U. Express. Every one seems delighted with the quality of your Teas. The information spread like a prairie on fire, from house to house, that Teas of excellent quality and delicious flavor were to be had for \$1, and \$1.25 per lb., and the enclosed order speaks more in praise of your teas than I am capable of, knowing that only fourteen days have elapsed between the first order and the second.

Many thanks for the complimentary package, and you will please forward this my second order for \$9.30 soon as convenient.

I remain, yours respectfully,

JOHN HEMINGWAY.

CLUB ORDER.

Fond du Lac, Wis., Oct. 8, 1867.

To the Great American Tea Company,

31 and 33 Vesey Street, New York.

Gentlemen—Yours of the 9th came to hand in due time, and likewise the box of Tea and Coffee, I received in good order, and gives good satisfaction. After eleven months trial I have never heard one complaint about your Tea and Coffee. As long as you do as well by us as you have done, we shall never be sorry for finding out the Great American Tea Company. Inclosed please find an order for more Tea and Coffee. Many thanks for your complimentary package.

Yours truly,

ALEXANDER MASON.

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1 Young Hysan.....	Mrs. McFarlane.....	at 1.25.....	1.25
1 Oolong.....	at 1.00.....	1.00
2 Mixed.....	P. Cummings.....	at 1.00.....	2.00
2 Young Hysan.....	P. Kinner.....	at 1.25.....	2.50
1 Young Hysan.....	W. Smith.....	at 1.25.....	1.25
2 Gunpowder.....	O. Pritchard.....	at 1.50.....	3.00
1 Young Hysan.....	T. Beathcoat.....	at 1.25.....	1.25
1 Oolong.....	.....	at 1.00.....	1.00
1 Java Coffee, ground.....	.....	.....	10
2 Young Hysan.....	J. B. Craig.....	at 1.25.....	2.50
2 Young Hysan.....	M. DeBarnott.....	at 1.25.....	2.50
4 Java Coffee, ground.....	J. Edmund.....	at 40.....	1.60
2 Young Hysan.....	.....	at 1.00.....	2.00
2 Young Hysan.....	J. Mills.....	at 80.....	1.60
2 Oolong.....	C. Cahill.....	at 1.00.....	2.00
2 Young Hysan.....	P. Smith.....	at 1.25.....	2.50
2 English Breakfast.....	M. Masie.....	at 1.20.....	2.40
2 English Breakfast.....	A. Weston.....	at 1.20.....	2.40
2 Java Coffee, ground.....	A. Nelson.....	at 40.....	80
2 Java Coffee, raw.....	J. B. Richards.....	at 35.....	1.40
2 Imperial.....	.....	at 1.25.....	2.50
1 Java Coffee, ground.....	J. B. Howard.....	at 40.....	1.60
1 Gunpowder.....	T. Stoddard.....	at 40.....	1.60
			1.50..... 1.50

\$92.65

N. B.—All villages and towns where a large number reside, by Clubbing together, can reduce the cost of their Teas and Coffee about one-third beside the Express Charges, by sending directly to "The Great American Tea Company."

BEWARE of all concerns that advertise themselves as branches of our Establishment, or copy our name either wholly or in part, as they are *bogus* or *imitations*. We have no branches, and do not, in any case, authorize the use of our name.

Post-Office orders and Drafts, made payable to the order of "Great American Tea Company." Direct letters and orders to the (as below, no more, no less).

Great American Tea Company,

Nos. 31 and 33 VESEY-ST.,

Post-Office Box, 5643, New York City.

NOTICES OF THE PRESS.

From the American Agriculturist.

THE GREAT AMERICAN TEA COMPANY.—TO QUERRIES.—Before admitting their advertisement, we learned that a large number of our clerks and others had for several months been buying their Tea and Coffee from this Company, without its being known who they were, and that they had been highly pleased with their purchases, both as to quality and price, and were all recommending their friends to the same course. As we have published their advertisement for many months, and received no complaints, we conclude "there is no humbug about the establishment."

Iona, Israella and Delaware Vines.

Of Iona, my stock is large and excellent for all planting, including superlative plants grown especially for gardens and small vineyards for early abundant bearing. I have also a large stock of fine healthy plants of small size for nursery use to make two-year-old transplants, or for very careful vineyardists. No stock of Israella is not large. I have Delaware 2 years old, also layers and single vines.

Iona and Israella holding rank in value far above all others have received the largest share of my attention in propagation. Israella is a pure flavored, refining, with which none from Ives' Seedling can hold in comparison. In my estimation, it has more hardy and enduring roots than any vine that I have cultivated, especially to those of the variety of soil, and has more strong points of excellence than any except Iona.

There are a few points in regard to grapes that clearly and palpably demand special consideration at the present time, of all who would choose wisely for planting as to profit and enjoyment for vineyard or garden, for wine or for table use. The point of profit has been reached and passed already by Iona and inferior kinds for the table and for wine, the "undecided million" are disputing the expectation of those who planted for them grapes too poor for their own eating, and the rate of sale of such grapes would be very small.

With grapes as good as the best of those of Europe, and hardy productive vines, the point at which large profit will fall cannot be reached in many sections (such is Iona). Tons of good grapes like Iona will not satisfy the wants of families that would find a score of pounds of Concord more than enough. One bottle of Concord wine (75 cents) is quite too much for health and enjoyment where a cask of Iona would be found to cost scarcely an allowance.

(Continued page 23)

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Editor *American Agriculturist*,
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See present No. of *Agriculturist*, page 32, for prices, and order at once.

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Box 155, Pittsburgh, Pa.

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VOLUME XXVII.—No. 2.

NEW YORK, FEBRUARY, 1868.

NEW SERIES—No. 253.



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A SOUTHERN MULE-TEAM. — Drawn and Engraved for the American Agriculturist.

The spirited and faithful engraving of a southern mule team, with its black driver, and the mud-burdened wheels of a winter road, presents a scene familiar to many of our readers. How many hundreds of fine teams were sacrificed to war's necessities during the years 1861 to 1865, not even the records in the quartermasters' offices will correctly show. But the war fairly introduced the mule to northern agriculturists, and now he is more than ever popular with those who have steady hard teaming to do, where four or six mule teams can be conveniently handled. Mules have greater endur-

ance than horses if put to hard labor. They are not so heavy as large horses, and on this account not suitable for heavy city teaming, where two powerful horses must do the work of four lighter ones, principally on account of the necessity of turning in the narrow streets.

The mule is adapted to farm work and to hot weather, though he works well in our coldest winters. He is an easy animal to keep, less liable to disease than a horse, and, though subject to the same maladies, seems to be very much less injured by them for common service.

Mule teams have long been, and probably

ever will be, a prominent feature of the agriculture of the Southern States. The negro driver and the mules seem to get along wonderfully well; they seldom have fallings out, and the brutality common among city teamsters, who have the gentler-tempered horse to manage, is rarely or never exhibited by the mule drivers.

We believe it to be a fact that a mule is but little if any more stubborn or wilful than a horse if subject to the same treatment. Certainly the ass is the most long suffering of brutes, and whatever of spunk the mule has, we think comes from the side of his dam.

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AMERICAN AGRICULTURIST.

NEW-YORK, FEBRUARY, 1868.

Verdant fields, bright with white clover, or fresh springing grasses, together with the blossoming of shrubs and trees, make many days of the February of the Gulf States and the far South among of the most delightful of the year. Plowing for spring wheat and for other crops gives employment to the laborers and teams, and the season of the work fairly begins with the warm, drying, weather usually occurring at this time of the year.

The Northern Farmer buffers the Winter usually for a good part of this month. He may look for deep snows, powerful rains, ice storms, and hard freezing weather, with the thermometer below zero, and need not be disappointed if before the 20th the frost is all out of the ground south of latitude 41°, and bluebirds are singing. Nevertheless it will probably freeze up again, and the poor little birds will look blue enough.

The days are much longer, and they should show notably more work done than those of December or even January; nevertheless, there is comparative leisure, and season for reviewing the past year's work and laying plans for the coming months, when so much hard labor will be demanded that the mind will not give itself readily to continuous thought. Whatever plans are made, on this very account, if for no other reason, should be put upon paper, so that when the time comes for their prompt execution, they shall not be forgotten. The season of field work, when it does come, will be likely to come all at once, and then you will feel as if every moment were gold, as if the horses and oxen, though doing their utmost, did not walk half fast enough. Therefore use the leisure of this month to get all ready for spring work.

Hints About Work.

The farmers of New England, to say nothing of our readers in New Scotland or even farther north, may smile at the idea of our dropping hints about spring work for February, and congratulate themselves that they have two months of winter yet; as the old salt, in the midst of a roaring north-easter, expressed his supreme pity for "them unhappy folks a-shore now." Nevertheless, we, of a milder climate, can stand it very well not to have the thermometer go below zero more than twice a week, in December and January, and to have a thaw in February that will give us a chance to do a good deal of spring work important to do early.

Field Work.—If the snow is off from the fields, the opportunity is a good one to pick up stones. Cart them off from the mowing and grain fields in the mornings, while the ground is frozen. The grass fields may be gone over with a sharp hoe, and all the tussocks of grass or clods that stand up above the rest of the field cut off smooth.

Winter Grains.—If grain does not look well, and has been thrown by the frost, apply a light even dressing of fine well weathered muck, or soil, or roll, or simply roll without the top-dressing.

Grass and Clover Seeds.—These may be sown toward the end of the month, if the frost is pretty well out of the ground and the surface open and fissured. The sowing is easiest done on a light snow, when the seed may be seen, and an even cast secured. To this end, it is often well to sow in two directions across the field, and sometimes even three, as in sowing grass seed upon a lawn. Suitable weather for this frequently does not come until March. Avoid sowing where melting snows will wash the soil away, or move the seed unevenly.

Buildings.—Timber may be prepared for new buildings, or for alterations and repairs of old ones, and if the weather favors, the frames may be raised, and the building go on. A few handfals of salt, or a little old brine, put about the posts of sheds, corn cribs, gates, etc., which are likely to be heaved out of place by the frost, will prevent it, in most cases, certainly until the salt washes away.

The Wood Lot still furnishes work in cutting firewood and clearing up stuff already down, cutting bean poles, splitting rails and posts, dressing and hauling them. It is a good season to cut pine and hemlock, but hard wood ought to be cut earlier in the season for either firewood or durable timber.

Ice.—The provident have probably taken advantage of the cold weather of December or January, to have their ice all gathered. Still it is not too late, though where ice can be brought to the door, twice a week all summer, at a cost of \$7 or \$10 for all that a family needs, it is hardly worth while to be at the expense of filling an ice-house. When ice is used for a large dairy or other purposes, the case is quite different. Many houses in which it has been found difficult to make the ice keep, will keep it very well if a thick layer of straw or wheat chaff is put at the bottom, and the house filled with pounded ice, thrown in, and beaten to pieces.

Farm Hands.—February is the best month for the employer to engage the best hands, and it is the best time for the hands to make the best engagements. The prices offered to secure a first-rate man are usually larger now than later. At present, January 15th, labor is very abundant in the vicinity of New York City, and it seems likely to remain so.

Seed.—Look out betimes for all the seed you are likely to want, getting samples to test the vitality, and examine the quality before purchasing largely.

Manure.—Composts may be made with two-thirds dry muck, and one-third fermenting stable manure, which will be ready for use in six weeks. Muck composts, or those made with peaty material or soil, may be hauled and spread at any time. It is also an excellent plan to work over all the manure in the yard and barn cellars, laying it up in compact rectangular heaps, well trodden down.

Animals, toward the close of the winter, often begin to show lack of appetite, staring coats, vermin, etc., and, if these are neglected, more serious maladies. This indicates neglect of some kind, and the master must look better to his own.

The Card and Currycomb can hardly be too frequently or too thoroughly used. They will often exterminate lice from colts and calves in a short time, if used two or three times a week upon them. The best article we know of for the removal of vermin is the carbolic acid soap. Cresylic soap is, we believe, simply a trade name for the same thing. This is very efficient as a sheep dip, or wash, at this season, and may be applied without any danger of poisoning or injuring the animals.

Working Stock should not stand idle; find some work for them, and, if possible, gradually increase it, that they shall not feel plowing and other hard work by and by. Both horses and oxen, used on the road, must be kept sharp shod, to prevent slipping and disabling themselves on the ice, and it is an excellent plan to feed roots with the grain given to both horses and cattle, or any other animals.

Colts.—Pet and handle constantly, giving sugar or bits of root. There is often leisure for breaking colts at this season to both saddle and harness. There is seldom need of whipping. Coaxing with carrots or sugar will go twice as far. The results are more lasting and all for good. Whipping may produce a beneficial result for the time being, but the aftereffect is only evil, except with hard cases which nothing else will effect.

Steers also may be broken to the yoke and to labor. This is usually an easy matter, and it is an excellent thing to have the sight of the yoke and bow in the hands from the first associated with salt or a turnip. Yoking will be easy ever after.

Bees should be well fed; their gain in flesh is of far less consequence than the gain in the manure pile, but both are equally affected by good food. The great gain in beef cattle ought to be in the autumn. In the winter, if the stables be warm, bees will keep on gaining very well, as a general thing, but in cold stables, the gain will be an expensive kind, food being used as so much fuel only.

Cows.—Most farmers dry their cows early, in order to save the labor of milking. This is poor policy,

unless the cows are valuable chiefly as producers of beef animals. It injures a cow to give milk after she begins to make bag, and as the time of the very beginning of bag making is indefinite, it is well to milk up to within four or five weeks of calving, and then dry off rapidly and stop. The calf is larger at birth for having the nutriment which would otherwise be withdrawn in the milk, but a very large calf often endangers the life of the cow.

Sheep.—The strongest should be by themselves, weak ewes and lambs by themselves, so that the allowance of grain or oil-cake shall be evenly distributed. There is profit in very early lambs, but buildings and everything must be adapted to raising them with their rapid growth unchecked by exposure to the weather, yet encouraged by fresh air and sufficient room for healthy exercise.

Work in the Horticultural Department.

In the recent war in Europe, the Austrians burned an important bridge; the Prussian commander telegraphed to Berlin, and in a short time a duplicate bridge came with every piece numbered, and ready to put up. There was in store, at Berlin, a duplicate of every important bridge located near the seat of war. What has this to do with horticulture? The principle of being ready for every emergency has much to do with it. Head-work has quite as much to do with a campaign as hard fighting, and effective generalship tells, though perhaps in a less brilliant manner, as well in the kitchen garden as on the battlefield. An extra spade or whiffletree, and a reserve supply of seed to replant in case of failure, are as important to the gardener as an extra brigade or reserve regiment are to an army. Now is the time to anticipate accidents and provide everything that may be needed. Next month, active operations will be crowding, and even now, at the South, out-of-door work is going on. Trees should be ordered at once. We learn from nurserymen that stock of some kinds is very scarce, and it may be necessary to apply to more than one dealer, in order to procure the required varieties. The assortment of seeds is at its best this month, and it is well to secure them now. The same with implements; purchase the best, and have extra ones, or duplicates of parts that are liable to be broken.

Orchard and Nursery.

There is but little of out-of-door work that can be done, except what was given in last month's notes, though at the South planting is in order.

Injured Trees are to be attended to as soon as the trouble is discovered. Limbs that are broken down by ice and snow are to be removed, the wound pruned clean, and, if it be a large one, covered with grafting wax. As the snow disappears, the work of

Rabbits and Mice will show itself. If the bark is only partly removed, put over a thick plaster of cow manure and clay or loam, and bind it on with a piece of matting or cloth. This will keep the parts moist and in good condition to heal when growth begins. Trees that have been completely

Girdled, may be saved by the method of grafting noticed on page 43 of the "Basket."

Washing and Scraping are of great benefit to neglected trees, and washing, at least, may be done with advantage on all fruit trees. It destroys the young and almost invisible growth of mosses and lichens, kills dormant insects that have hidden in crevices, and improves the tree generally. Various tree washes have been recommended, but there is probably nothing better than good home-made soft soap, thinned with water to work conveniently with a brush. It is best to apply it in a damp, but not rainy, time. Remove the loose scales of bark by means of a blunt scraper.

Insects are to be fought at all seasons. We repeat the advice to remove the eggs of the tent caterpillar before they hatch. They are to be found near the ends of the small twigs, glued around in a neat band. The females of the canker worm begin to ascend the trees as soon as the ground thaws. There

are many protectors, all of which agree in principle—that of interposing a barrier over which the insect cannot pass. See "Basket" item, page 49.

Cions may still be cut. Pack them in sawdust; or, if put in a tight tin box, and kept in a cool place, their own moisture will keep them plump and in good condition until it is time to set them.

Planting and Grafting.—The time for doing these operations will depend much upon the locality. We wish to give the caution not to be in a hurry. It is better to delay both until the cold, drying, winds of spring are over. Much of the failure in grafting is due to its being done too early, and many a young tree is dried up before its roots are in a condition to receive any moisture from the soil.

Nursery Trees now being sent out at the South, will be delayed in transportation, and often suffer either from freezing or drying. Thaw frozen trees as gradually as possible, and bury dried and shriveled ones, tops and roots, until they become plump.

Fruit Garden.

For care of injured trees, treatment of insects, and general matters, see notes under "Orchard."

Pruning of small limbs may be done with the knife wherever necessary, to bring trees into shape.

Grape Vines not attended to last autumn should be pruned in the first mild spell that occurs. Whenever the frost is fairly out of the ground, set

Strawberries as soon as plants can be procured.

Manure will be spread around the trees.

Trellises will be needed for grapes, and posts should be got out. Where durable timber is scarce, set a short locust post in the ground, and spike to it an upright of other wood. Look up the various plans of trellises, and select that which is best.

Kitchen Garden.

Where there is no glass in use there is but little that can be done in most northern gardens, save the accumulation of manure. It is the one thing needful for success in gardening anywhere, North or South. The late Mr. White remarked that he saw more manure ready to put on an already rich market garden of two or three acres, at the North, than a southern planter would think of putting on a farm of five hundred acres, garden included.

Southern cultivators will now sow early crops of hardy vegetables—turnips, carrots, lettuce, cabbages, radishes, onions, leeks, spinach, parsley, etc., and plant potatoes, peas and rhubarb, asparagus and other roots. The time for sowing tender vegetables, such as okra, beans, cucumber, etc., must be governed by that at which it is safe to plant Indian corn. Corn is so generally planted all over the country, and the time at which it is safe to put in the crop is so well established in each locality, that there is always a safe guide for the inexperienced.

Manure, whether to be spread for the crops or to be used for hot-beds, must not be allowed to get overheated. Turn it over, and water it, if too dry.

Cold Frames.—Plants in these will need more care, must have plenty of air, and exposure by removing the sashes whenever the weather will allow.

Hot-beds, unless very early vegetables are wanted, need not be made, at the North, until next month. In southern gardens they may be prepared, and tomatoes, peppers, egg plants, cabbages, etc., sown in them. Shelter from prevailing winds should be looked out for, and if necessary to make the bed in an exposed place, it will pay to put up a temporary fence to shut off prevailing winds.

Straw Mats are almost indispensable where there are hot-beds. See article on page 23, January.

Brush and Poles for peas and beans should be cut while there is leisure, trimmed and sharpened, and stacked near the place where they will be used.

Root Crops that were left in the ground all winter—salsify, parsnips and horseradish—may be dug for sale or use whenever the ground is thawed.

Rhubarb may be forced, by taking up the roots and setting them in boxes of earth in a green-

house, or a few roots in the bed may be forced by covering with boxes or barrels around which is heaped a good supply of fermenting manure.

Radishes.—Plant some early sort, such as Early Goodrich, as soon as the frost will allow.

Flower Garden and Lawn.

There is plenty of planning, and some work to be done. One of our best writers gives the advice to always have the garden look different each year. The advice is good, and is capable of being followed even in a very small place. Take a single bed in a lawn. One year it may be gay with Colons and other "foliage plants;" in the fall, plant Hyacinths, Tulips, and other bulbs; in early spring, sow *Portulacas* to make the bed gay when the bulbs have passed out of bloom. In a similar way each bed in a lawn can every year present some new feature. Of course in borders where there are herbaceous perennials, there must be some sameness in their appearance for several years in succession. Yet if these are so planted as to allow room for the introduction of clumps of annuals or bedding plants, a pleasing variety can be made, and be different every year.

Ornamental Trees should have the same care as fruit trees. Most of them will repay manuring, and they need pruning whenever a branch disfigures the proper shape.

Shrubs may be pruned and thinned. Those that bloom on the new wood may be cut back, but those which have their flower buds already formed need only to be thinned when the growth is crowded.

Seeds of Annuals may be sown, where there are facilities for keeping the young plants in good condition until time to set them out, but as a general thing sowing in hot-beds or in window boxes had best be left until next month.

Plants in Pots must have air on warm days, or they will get drawn up by the increasing heat of the sun. Give water only when the soil in the pots is dry.

Roots, such as Dahlias, Cannas, etc., stored in cellars, ought not to be too damp. If there are signs of mould or rot, remove them to a dry room.

Wood Work that is to go out of doors should be repaired. Give rustic work a coat of oil, and paint such trellises and frames as need it.

Lawns may be rolled as soon as the frost is out of the ground, and if they did not have a top-dressing last autumn, give one now of good compost.

At the South.—Make walks, prepare borders, and set edging. On page 63 is given a successful method of raising box-edgings from cuttings. Transplanting of trees, shrubs, and herbaceous perennials, may be done, and the hardier annuals sown.

Green and Hot-Houses.

As the weather gets milder more care will be required with the fires, as sudden changes are apt to occur. Maintain an uniform temperature, which should be 10° to 15° lower at night than during the day.

Camelias that have done flowering are to be pruned, and if the pots are full of roots, re-pot.

Azaleas will now be coming into flower; give more water, and when in bloom, shade from the hot sun in the middle of the day.

Planting of plants that appear to be sickly may be done, cutting them back at the same time. It is not always necessary to put into a larger pot, but shake out the old earth from the roots and re-pot with fresh soil, in the same pot.

Annuals may now be sown, either to bloom in pots, or for turning out into the borders.

Propagation of bedding plants of all kinds should be going on. Our most successful growers use very short cuttings, of tender and succulent growth.

Forcing Plants.—Hardy shrubs and herbaceous plants that were potted for forcing may be brought into a warm place; give them water as they start.

Bulbs, as they pass out of flower, are to have the flower stalk cut away, but should not be allowed to dry until the leaves show signs of withering.



Containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Mark all subscriptions sent in as New or Old.

How to Remit:—Checks on New-York Banks or Bankers are best for large sums; make them payable to the order of Orange Judd & Co.

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the *Registry fee*, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money and seal the letter in the presence of the postmaster, and take his receipt for it. Letters sent in this way to us are at our risk.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be pre-paid at the Post-office where the paper is received.

Three Notes About Advertisements.—1st.—To be sure of insertion, advertisements must reach us by the 5th of the preceding month; it takes the greater part of a month to work off our large edition, especially to print the engravings well. 2nd.—Advertisers should remember that we cannot insert Patent Medicines, or anything deceptive in form or substance, and that advertisers, unknown to the editors personally or by good repute, must furnish good references or other evidence that they have both the ability and intention to do just what they offer to do. Our rule is to admit no advertiser to whom we would not ourselves send an order with the money in advance. If we chanced to want his articles at the price put upon them. 3d.—Our Readers will usually find much valuable information in the advertising pages, by looking them all through, and as we are unusually strict with the advertisers themselves, it is gratifying to them to know that through this journal they come in contact with a large and widely scattered class of intelligent and enterprising persons. We therefore request those ordering of our advertisers, or sending to them for catalogues, circulars, etc., to state where the advertisements were seen.

Grand (Humbug) Prizes!—Clark, Webster & Co., A. A. Kelly, and sundry other parties, are troubling many people by telling them that they (the said people) have drawn prizes of \$300, more or less, which will be forwarded on receipt of the usual cash 5 per cent. assessment. A good many have even sent the money to us, to hand over to them, all of which has been returned to the senders—and pray don't trouble us with any more for this purpose. The "grand prizes" are only certificates for "shares" in a humbug "Petroleum Company." Two Hundred Shares (the \$300 prize drawn) are worth about one-sixteenth of one cent at the present low price of paper. Most of the "prizes" and "gifts" offered by numerous other parties are similar.

Good for Postmaster Kelly.—We really forget just what are the "politics" of the N. Y. City Postmaster—whether he is a Conservative, a Republican, a Democrat, or a "judicious mixture of several," and so we may be permitted to commend his acts as postmaster without treading on anybody's "political toes." The efficiency displayed in all parts of this, the most important Office in the country, the improvements in the city delivery, etc., are patent to all. But we have only room to speak of one thing here, viz. his gratuitous efforts in connection with Mr. Gayler and others, to protect people from the swindling fraternity. Various plans have been tried, involving no little trouble and annoyance to the officials. The latest one is temporarily effective. As we have often announced, many of the swindling schemes are carried on by a few persons who operate under different names. With all our investigations, we can hardly guess how many aliases have been used by Todd and others, Mr.

Kelly hit upon the expedient of refusing to deliver letters addressed to fictitious names, and many thousands of such letters are now held back from the claimants. He has been sued for this, but he shows fight, and we hope he will keep it up vigorously. If defeated in any one case, we hope he will try another, for there are certainly many fictitious firms engaged in watch, jewelry, gift, and other swindling enterprises. If no other good comes of it, it will at least result in compelling the operators to show their hands, or their real names, and when this is done the parties will be more directly accessible to prosecution as swindlers. The U. S. Mail, issued at the N. Y. P. O. at \$1 a year, a desirable periodical for all business men, as well as for all Postmasters, has done good service against the swindlers by mail. It has been the most efficient ally of the *Agriculturist* in this respect.

The American Horticultural Annual for 1868.—This year-book commends itself to all cultivators, whether amateur or professional. Perhaps the best notice we can give of it is to present a resumé of its contents: An Almanac and Calendar of Operations for each month of the year; several useful Tables; an article on Rhododendrons and their Culture, by S. B. Parsons; Propagation of Geraniums and Other Soft-wooded plants, by Peter Henderson; Propagating Evergreens from Cuttings, by Josiah Hoopes; Tropical Gardening, by George Sack; Horticultural Implements and Appliances; Apple Culture with particular reference to Early Varieties, by Wm. S. Carpenter; The New Apples of 1867, by John A. Warder; Pears Tested in 1867, by Hon. Marshall P. Wilder; Peaches, Plums, and Cherries, in 1867; Native Grapes in 1867, condensing reports from all parts of the country; Notes on the Small Fruits in 1867, by Andrew S. Fuller; Notes on the Rarer Evergreens, Deciduous Trees, and Hedge Plants, by Thomas Meehan; New Roses tested in 1867, by John Saul; New and Interesting Bedding and other Plants, tested in 1867, by Peter Henderson; Annals—New ones tested in 1867—and Selections for Sowing, by James Vick; Notes on New or Noteworthy Vegetables, by Jas. J. H. Gregory; Nurserymen, Seedmen, and Florists.—Under each head are given references to the new fruits, plants, etc., described, and to all those figured in the horticultural journals during the past year. The volume is abundantly and beautifully illustrated, printed on fine paper, and sent by mail in paper covers for 50 cents, and bound for 75 cents. This is one of the cheapest books ever issued; it contains 164 pages of matter, the excellence of which is attested by the names we have given above. The Annual for 1867 is still in demand, and the plan of the series is such that the volumes will always have a permanent value to all who cultivate plants, whether for pleasure or for profit.

Harris' Insects.—The edition of Harris' Insects Injurious to Vegetation, edited by C. L. Flint, is the most popular work on entomology, and, indeed, almost the only one not intended for the purely scientific student. The familiar descriptions of the insects are much aided by the excellent plain and colored illustrations. Neither this nor any other work contains all the insects one meets with, but as it comprises those which are injurious to cultivated and wild plants, it includes the more common ones, and is sufficiently systematic to give a general idea of the classification of insects. It takes a practical view of the matter as well as a scientific one, and gives the means, as far as known, of combating these enemies of the cultivator. This very beautiful and popular work will hereafter be published by Orange Judd & Co. An edition is now in press and will soon be ready, in a style in keeping with the former issues.

Price, with finely colored plates, \$6.00; plain, \$4.00.

Cannot Tell.—We have several times been asked if a particular person is a subscriber to the *Agriculturist*, and where he lives. In a letter now before us, the writer takes this method of finding the whereabouts of a friend. We cannot easily ascertain if a name is on our books, unless we have the State, County, and Town, and are usually unable to answer such inquiries.

Fruit in Nova Scotia.—C. C. Hamilton, Pres't Nova Scotia Fruit Growers' Association, sent us a half barrel of specimens which were so long on the way that they arrived in bad order. In his letter he says:—"The Valley of Kings and Annapolis Counties, protected on the north by a high mountain, and having the Bay of Fundy to the north of the mountains, seems well adapted to the raising of fruit. Apples are largely cultivated, and within ten years immense numbers of orchards have been planted, a large portion of the trees being imported from the United States, many of which are now bearing. Several nurseries are now in operation which will soon supply us with all the trees we want. Besides apples, we grow pears, peaches, grapes, and quinces, in a limited way, and abundance of plums." Good for Nova Scotia.

Gardening for Profit.—Those who cultivate a large or small garden are reminded of the excellence and practical character of this work. These are attested not only by the general commendation of the press, but by the remarkable demand for it from all parts of the country. Though written by a market gardener, its teachings are none the less adapted to private cultivators. To those with whom land is limited to a small plot, it is especially useful in showing how the most is made of a piece of ground. Every one who cultivates vegetables, whether for sale or for his own use, will find in this work something that will facilitate his operations.—Price, by mail, \$1.50.

Horticultural Societies.—We have several notices of winter meetings of Horticultural and Pomological Societies, which reached us just after the January number had gone to press. Secretaries of these societies are most excellent people, but they are provokingly slow. Of course, we only wish to publish the times of meeting of the State societies, and those whose assemblings are of general interest. If the meeting is to be held in January, give us the notice by the 10th of December.

For Sabbath Schools.—The Question or Lesson Books, entitled, "*Lessons for Every Sunday in the Year*," continue in quite as large demand as ever before, notwithstanding the fact that several other books, modeled essentially after the same plan, have been recently issued. These are designed to secure the learning of portions of the Scriptures; to give a connected view of Sacred History; and especially to aid S. S. Teachers who are not well supplied with commentaries, reference books, and other helps. No. 1 embraces the period from the Birth of Christ to the end of Acts; No. 2, the rest of the New Testament; No. 3, from Adam to Elijah; No. 4, from Elijah to Christ. About half a million copies of No. 1 have been called for, besides large editions of Nos. 2, 3, and 4. They are used by all Denominations. That they are non-sectarian, is well proved by their use in the various churches in nearly equal proportions, and especially by the fact that the author has received letters from members of almost all orthodox churches, each claiming him as one of their own members.—These books are sold at the very low price of 15 cents each; postage to be prepaid when sent by mail, 4 cents each, or 3 cents, when in parcels of 10 or more. We send full sample copies, (Nos. 1, 2, 3, and 4,) post-paid, for 75 cents.

Sundry Humbugs.—During a couple of weeks past we have received a mass of letters containing the schemes of no less than 47 swindling operators—in New York, Philadelphia, Boston, Pittsburg, Columbus, O., West Hampton, N. Y., Milford, N. J., Providence, R. I., Albany, Troy, Williamsburg, etc., etc. Of these 23 are Gift Enterprises, Lotteries, and pretended Associations, and about a dozen are from bogus Watch and Jewelry dealers. Others are circulars of Mining Companies, Employment Agencies, pretended Cheap Oil Manufacturers, Cheap Ink Powders, vile Publications, Wonderful Medical Discoveries, etc., etc. It would take a volume to describe all these schemes. Here is an extensive Mining Company, claiming the endorsement of U. S. Senators, and other public men, and pretending to be immensely profitable, yet the "President" is sending circulars soliciting subscriptions at \$5 each, from which "agents" are offered \$2, and seven shares free for each 10 shares sold; that is, for \$30 from agents, 17 shares of stock will be given, worth now \$85, and soon to be certainly worth \$255, while "1 per cent in gold is guaranteed on the first of each and every month." This is the gist of the matter, but the offers are so ingeniously stated, and the commissions to "agents" so large, that we hear of numerous persons taking the bait. Why, if even one-quarter of the allegations were true, the Senators and Merchants endorsing the scheme would quickly seize upon all the stock for themselves. We would in one hour get subscriptions for the whole, and save the "President" all the expense of circulars and postage. People should look at these schemes with a little common sense figuring. The truth is, it is all a humbug; the pretended President pockets all he gets; the wonderful Gold Mine is not nearer than the moon. We have dwelt longer on this one swindle, as it is an example of many others much in vogue a few years ago, and now apparently coming to the surface again. The Watch schemes are still numerous, varied in form, but all of a piece. Great promises are made, and cards, tickets, etc., are sent with definite offers of valuable watches for a small sum. We warn the reader that, without exception, every offer of watches and jewelry by circular or ticket is a humbug. In 99 cases out of 100, no return is made for money forwarded, and when anything is sent, it is a poor thing so gilded or silvered by gaudily as to temporarily cover up the real cheat. Honest dealers who are constantly importing watches and jewelry, would take all the good stock off the hands of these "operators," if they had any, at far higher prices

than they pretend to ask in their circulars. *There is not a watch in this whole city to be bought under its real value.* wholesale or retail, and on standard articles like good watches, there is not a wide difference between the wholesale and retail price—nothing more than a fair business profit. All of the stories of the "circular" and "ticket" men are the merest falsehoods. . . . Take one example of these watch and jewelry swindlers: Geo. Howard & Co., up Broadway, send out an ingenious circular calculated to deceive the unwary. A careful examination of this document shows that they offer tickets at \$1 each, or 36 tickets for \$30. In another place they offer watches valued at \$12 to \$20; and in a third place they say "more than one-half of our tickets draw Gold or Silver Watches." Is anybody so green as to be deceived by this concern? Yet they claim to be selling "6,000 tickets a week," and if they did not find many dupes, they would not continue to send circulars and pay postage. We are trying to enlighten the class among which these and other swindlers find their victims. We hope the circulation of the *Agriculturist*, so rapidly extending, will soon leave no unenlightened folk for the humbug fraternity to operate among. . . . Look out for "patent rights" sold for notes "not to be paid until the article proves satisfactory." In such cases, the guarantee is separated and the notes sold in a collectable condition. . . .

An immense "Lottery" with the sympathy-for-Lincoln dodge attached, is started at Columbus, O.,—with 50 cent tickets, as taking as the "Royal Havana Lottery," with the "wheel" lot and all, only here it is called a "Distribution," and is said to be "managed" by the "Lincoln Discreet Association." The Managers of the Express Company do not approve of the active efforts in promoting this enterprise, by their Agent, at Columbus, O., and they assure us that it shall be stopped at once. . . . Young men, beware of circulars about sporting and obscene books. Those who send these violate the law once in so doing, and they intend to do it again by *stealing* the money you send them. . . . We are greatly pleased to find other journals waking up to the importance of giving information about the various swindling schemes that are flooding the country. We have labored hard for this for many years past, at large expense of time, patience, and money, and with the annoyance of lawsuits commenced as a bluff, but as often withdrawn or defeated. We have frequently labored alone almost in this field, as many journals have apparently feared to disturb the profits of their advertising columns. But since General Van Wyck compelled attention to the subject by bringing it forward in Congress, many other papers have taken it up. Even a recent number of the N. Y. Herald slashed away in its editorial columns at the very schemes we have so long been showing up. The Herald would have been consistent for once, if in the same paper there had not appeared a flaming advertisement of the Gettysburg Gift Enterprise. The N. Y. Tribune recently published a long exposure of swindles, going over the same ground we have traveled for many years past. This would have come with more force, if that paper had excluded the advertisement of one of the Gift swindlers that occupied its columns only eight or ten days before. But we hail the appearance of the antidote; and while so very many journals take the ground of "no responsibility for advertisements," the reader must look to the editorial columns for the truth. We can not see how publishers of otherwise respectable newspapers can constantly advertise humbugs, and the disgusting—nay, the crime-producing—medical advertisements that pollute their pages. Take the N. Y. Daily Times as an example. The Herald don't profess to do any better, and any one who places it in his family, knows what to expect.—We have no desire to criticize or find fault with others; but the mixing up of these pernicious advertisements with news and other desirable information is to be greatly deplored; it tends to destroy the morals of the young and the weak-minded, and by so much is a positive injury to society at large.

Cotton Culture.—By Joseph B. Lyman, late of Louisiana; with an additional chapter on Cotton Seed and its Uses, by J. R. Sypher. New York: Orange Judd & Co.—This work which was announced in December, is now ready. It forms a neat hand-book of 190 pages, and gives all the details of cotton culture, from selecting and stocking the farm, to baling and marketing the crop. Illustrations are given of implements, presses, buildings, and of the insects that are injurious to the cotton plant.—Price, by mail, \$1.50.

A Cover for the Agriculturist.—C. H. Brown, East Bridgewater, Mass., makes a cover for his numbers in the following manner: "Take a thin piece of straw board, double it together, and cut it about one quarter of an inch larger, each way, than the *Agriculturist*, and make a notch at the top and bottom where it is bent. Cover it with some neat paper, and take a common bot board facing, and tie around it from top to bottom, passing it through the notches, and the cover is

ready to receive the *Agriculturist*. A number, (after it is cut,) may be slipped under the string, and taken out again when the next one is received. In this way the papers are kept clean, neat, and straight, and are in good condition for binding at the end of the year.

Journalistic Changes.—The Farmer's Adviser, St. Louis, is now published as a weekly, and has taken the name of Journal of Agriculture; it remains under the excellent editorial supervision of Doctor L. D. Morse. Colman's Rural World is now also a weekly, and Col. Colman has C. W. Murtfield as joint editor. The Southern Cultivator has changed hands several times since the death of Mr. White, and is now edited and published by Wm. and W. L. Jones. The two Richmond agricultural papers have united, and the resulting journal, taking the name of both, is the Farmer and Planter.

The Tribune's "Religious Items."—It is not exactly within our province to reflect upon the religion or politics of any person or paper, but as a neighborly set we must just hint to the Tribune that the following is just the oddest "religious item" we have met with: "Mr. Beecher's farm, up the river, yielded crops valued at \$3,700 last year."

Tainted Barrels.—Mrs. A. R. Austen, Ill., says they can be cleaned. "Dissolve a tablespoonful of strong potash in two gallons of rain-water, over the fire. Heat the water to near the boiling point. Rinse around so as to reach every part of the barrel, and stand to cool with the cover on. Then give a good scrubbing and pour out. Rinse with scalding rain-water and stand to cool as before. Raise the cover occasionally to see if the barrel is sweet, which can be told by the smell of the steam. Rinse thoroughly in cold water. If not cleansed by one operation, repeat the process."

An Amateur's Queries.—(1.) "Do you not think it injurious to use fertilizers that contain potash on tender plants?"—(2.) "Do you approve of whitewashing fruit trees?"—(3.) "Do you approve of plugging trees with sulphur or other ingredients to drive off insects? If so, which is the best article?"

(1.)—The question is too indefinite. All of the common fertilizers contain potash in some form. (2.)—Soft soap will answer all the purposes of whitewash and has none of its disadvantages, among which is its unsightliness. (3.)—We have many times disclaimed any approval of this, but have published one or two reported cases with the object of bringing out facts.

The Farm and Fireside, published in Woonsocket, R. I., and in Philadelphia, has been discontinued at the close of its first year. We are sorry to miss this sprightly young journal from our exchange list.

Barberry for Hedges.—Dr. M. A. C. and others. We never had occasion to grow the barberry before, and then the seeds were mixed with earth, and frozen and thawed several times before sowing. They came up in the greatest abundance. If the seed be fresh, we believe this preparation unnecessary. Sow as early as possible, in a mellow seed bed; do not cover over half an inch. Plants two years old are best for a hedge.

Birch Bark Pots.—Last spring, Mr. S. F. Alvord, S. Hadley, Mass., sent us samples of birch bark pots, which he finds excellent for starting tomatoes, etc., in the house. They are made of the flexible bark of the Canoe-Birch, (*Betula papyracea*). Where this tree is common, which is only in northern localities, the bark may be used for the above, and other domestic purposes.

The Walter Grape.—In December last we published an account of the Meeting of the Lake Shore Grape Growers' Association, furnished by Mr. Geo. W. Campbell. In this report Mr. C. said: "The Walter was not on exhibition; its originator being perhaps better satisfied with publishing pictures, exaggerating it four times larger than any specimens yet exhibited." Messrs. Ferris & Caywood think that this statement is calculated to do them an injury, and we give place to their reasons for not exhibiting the Walter, and their denial of the charge of exaggeration. They say:

"The Walter, as exhibited at Cleveland a year ago last fall, averaged five-eighths of an inch in diameter as measured. Increase this 'four times,' and it will be two and a half inches. Your readers can now see on which side the exaggeration is by referring to the cut, which was the size of the fruit year before last; and yet Mr. Campbell says we have given to the country 'pictures four times larger than any of the fruit ever exhibited.' He will be as anxious that we shall not exhibit the grape at Lake Shore, hereafter, as he was this fall that we should, as he will be compelled to look these facts in the

face. The Walter has each year, since it first bore, increased in size, and last season averaged eleven-sixteenths of an inch in diameter. These facts are known to the many hundreds who have visited the vine from different sections of the country. We have as yet but one bearing vine which has borne thirty-two clusters each of the past two years, and as our business was of such a nature as to require our personal attention constantly, we concluded to exhibit the small crop but once and telegraphed to the President of the Hammondsport Fair to this effect; but the next day A. J. Caywood, of the firm, was taken ill, and as many were arriving daily from a distance to see the fruit, we concluded not to send it.

"We cannot imagine what consideration caused Mr. C. to endeavor to make your readers believe that we were deceiving the country by exaggerating the size of a new fruit. He was one of the Committee who awarded the first premium to the Walter, at Cleveland, and exhibited as much enthusiasm over it as any one person we saw, and we find on our book his name for twelve vines. We feel constrained to name a few of the many who have visited the vine this last season, and declared in our presence that it was fully as large as Catawba, which averages considerably larger than the berries represented in our cut: J. A. Regna, Esq., Amenia, N. Y., (owner of the Salem;) Rev. Asa Bullard, 13 Cornhill, Boston, Mass.; Robert B. Parsons, Esq., Flushing, N. Y.; C. L. Hoag, Esq., Lockport, N. Y.; Rev. E. P. Roe, Highland Falls, N. Y.; and the grape growers in this vicinity.

White Grapes.—"J. D. P." has planted several white varieties, but his fruit all came of another color, and he wishes to know which is the whitest "in this climate." As there is no date to his note, we are puzzled to know where the place is that makes white grapes, "all ways of another color." It may be that careless nursery-men have as much to do with it as the climate. Or it may be that our correspondent is not aware that white, as applied to grapes, includes green, yellowish, pale amber, and anything but white. Probably the hardest and most reliable of the white varieties is the Martha. Very sweet, and in quality much like the Concord. If J. D. P. was a long season, the Maxataway would suit him; it is an excellent variety under favorable circumstances. The best of white grapes is Allen's Hybrid, but it is too liable to mildew for general cultivation.

Elm Wood, its Uses.—"H. A. M." Harrisburg, Pa. We presume our correspondent inquires for the use of the White Elm, (*Ulmus Americana*), which is by far the most common. The chief objection to it for fuel is its exceeding toughness, but it is used extensively for this purpose upon the farm, though not often carried to market. It will answer for boards, planks and joists, in positions where it will not be exposed to the weather. It is chiefly used for making the hubs of carriage and wagon wheels, and there is generally a market for it at the manufactories of these. The young trees are prized for streets and avenues. The wood of the Winged Elm has a much finer grain and is more valuable.

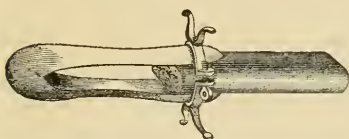
A String of Queries.—"J. M. E." Mt. Vernon. 1. The best kind of feed box for horses—is made of iron, and is to be found at the large agricultural and hardware stores in the cities. There are several patterns. 2. Corn Stalks cut and steamed make good feed for horses. If the animals are worked, they should have oats or meal in addition. 3. Bone dust can be procured at the large agricultural stores in our cities at from 40 to 50 dollars per ton. 4. Sorghum will grow on any good corn land. 5. Scrap cake can be procured at the tallow-chandler's.

Verbenas from Seed.—Lizzie Scarborough, Ill., writes that, being unsuccessful in keeping Verbenas over winter, she has tried raising plants from seed. The seeds should be sown as early as possible, and all the better if it could be done under glass, as it is desirable to get the plants in flower early. If seed of a good stock be obtained, most of the flowers will be passable, and there is a chance of getting some very fine ones. There is a great interest attending raising plants that are liable to vary from seed. To be sure, we have to pet a great many that turn out to be worthless, and one success makes us forget many failures.

Patent Office Reports.—J. F. Browne. Write to the Representative in Congress from your district, and he will either supply you or tell you how to obtain one. They are mostly distributed by Congressmen.

A Bit of Potato Experience.—J. H. Page, Wapella Co., writes: "Seeing your article in last year's *Agriculturist*, in reference to growing potatoes under straw, I concluded to try my luck, which was not so favorable as 'Hoosier's.' I planted three varieties, viz., the Spotted and Blue Neshannocks, and Cuzco, in

precisely the same manner that he did, and along side of them I planted the same kinds, the same distance apart, covered with a plow, and kept them well plowed and hoed. Those covered with earth came up sooner, grew faster, the vines had a much better color, and at digging time produced a third more and better potatoes. Mine under straw, like his, were badly eaten by the moles, etc., and while he covers his this year with straw, I shall cover mine with dirt. In digging, I found it as much trouble to remove the straw as the earth. Seeing it stated that a mixture of coal oil and water sprinkled on potato vines would repel the 10-lined potato beetle, I tried it, making it strong enough to turn the vines black in places; I applied it with a swab, made by tying a rag around the end of a stick. In applying it I knocked off a great many bugs, and by the time I got back on the next row to where I started, the bugs would be up eating away as greedily as ever, and the only plan by which I could get rid of them was to go over the patch once in two or three days, with a tin pan, hold the pan beside the potato hill, and with the hand brush the bugs into the pan, where I had them at my control. The Garnet Chili potato, bragged about so much in the East, has proved the poorest potato I ever raised, as far as eating qualities are concerned. It is often hollow, watery, and hard; it will not cook tender, and has a strong, rank flavor, when cooked." We quite agree with Mr. P. in his estimate of the Garnet Chili.



Whetstone Holder and Guard.—In using a stone for sharpening a scythe, beginners or inexperienced persons often cut their hands against the edge. Then, again, the best stones are usually fragile and likely to be broken into pieces too short to hold in the hand. We bought in London a little instrument useful in both of the above cases. Fig. 2. is a little ring of zinc-coated iron, with four flanges or prongs and a tightening screw on one side. This is slipped over a wooden handle cut out in the centre like a clothes-pin. (fig. 1.) A whole stone, or a broken half of one, is securely fastened by turning the screw, which enables one to use up fragments, or to use very short stones; while the flanges guard the hand from being cut, if a wrong movement happens to be made.

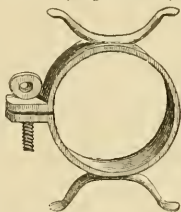


Fig. 2.

The Report of the Department of Agriculture for 1866.—This is a volume of about the size of its predecessors, and in quality of its contents above the average of them. It presents one new feature, in having taken to advertising certain favored agricultural machines. Under the head of "Improved Farm Implements," particular makers get first-rate notices, which, we presume, they paid handsomely for to somebody. Why a collection of essays by writers—known, unknown, and those who never ought to be known—should be put together each year, and called a report, we are at loss to understand. Much of the writing is of the magazine style, and of interest to no one but the public printer. All that it is of any importance in the volume could have been better told in one third of the space. With other reforms we look for one in this matter of reports, and it will be well for the new Commissioner to see if book-making in his department does not need to go the way of the seed peddling.

Wooden Cards.—One of the Parisian novelties is visiting cards, cut of the usual thickness (or thinness) from Beech, Sycamore, or other white wood, with the name printed from a copper plate in the usual way. Not likely to become pop(a)lar.

Death of R. A. Alexander.—The death of an enterprising, judicious, and successful breeder of improved stock is always the occasion of sincere regret among all who regard the prosperity of the country. In the death of Robert Atchison Alexander, we lose from among the prominent breeders of this country not only one of the most distinguished, enthusiastic, and successful, but a gentleman of cultivation, refinement, and high-toned character, of great wealth, which was freely used to pro-

mote the cause of Agriculture, especially in improving the stock of horses, sheep, and cattle. Though possessing some of the most famous blood and trotting horses, it is said he never bet upon a race, and used his influence against degrading wagers and bets both the horse and otherwise useful trials of speed. We regard his loss as a public calamity. His death took place December 1st, at his home in Woodford Co., Ky.

Potatoes on Broadway.—The windows of the office of the *Agriculturist* are at present occupied by a fine display of potatoes, from Reisig & Hexamer, Newcastle, Westchester Co., N. Y. It is curious to observe the crowd they attract. Probably many wonder at the great number of varieties; others stop and think of the time when they used to pick up potatoes on the farm; others, may be, think that when they are able to leave the city and live upon the farm, they will raise just such. Whatever may be their thoughts, there is generally a crowd of interested spectators who inspect 'taters.

The American Agricultural Annual for 1868 is, we think, decidedly in advance of its predecessor, which met with such general acceptance. It presents a great variety of information upon subjects of universal interest to agriculturists; its illustrations, besides, are carefully executed, and numerous. In addition to the Almanac, guide for work for each month, numerous useful tables, and minor items, the especially attractive articles are: *Factory Dairy Practice*, by the Secretary of the Am. Dairymen's Association, fully illustrated by engravings; *Milk and Butter*, by Prof. S. W. Johnson, of Yale College, giving the results of recent scientific investigations; an article on the *Wastes of Sewerage and Projects for their Utilization*, and upon *Earth Closets*, by Col. Waring, author of the article on *Drainage in the Annual for 1867*; *Horse Breaking and Biting Colts*, (illustrated) by Col. Headley, of Morrisstown; on the *Potato Crop of 1867*, by Dr. Hexamer; on the *Culture of Wheat in Western New York*, with description of favorite varieties, by Joseph Harris, accompanied by an interesting letter from John Johnston, of Geneva; on *Scythes, Snaths, and Cradles*, (fully illustrated,) by John W. Douglass. There is an article on *Fish Manure*, of especial interest, one on the *Prices of Fertilizers*, and *How to Judge of Fertilizers and their Analyses*, giving useful information.

The chapter on "Progress of Invention," etc., discusses a number of new or recently introduced implements of sterling value; and the one on "Progress in Agricultural Education" gives a statement, in brief, of the condition of the various State Agricultural Colleges. The Annual closes, after giving lists of Agricultural Books published during the year, and of Agricultural and Kindred Journals, with a *Farmers' Directory*, giving names of Manufacturers and Dealers in Agricultural Implements, Dealers in Seeds and in Fertilizers, and Breeders of Improved Animals of all sorts, Poultry, and Bees.

It is a very valuable companion to the farmer, and interesting and useful for everybody. It is printed very neatly, and the engravings are excellent. 12mo., pp. 152. Orange Judd & Co., New York. Price, in paper covers, 50 cents; bound in cloth, 75 cents.

Seeds, Plants and Implements.—Where to Get Them.—It is not necessary to inform our old subscribers that we do not answer queries as to the best place to get seeds, nursery stock, implements, etc., but the number of letters received of this purport, makes it necessary to state the fact to our new subscribers. These questions answer themselves in our advertising pages, and if we wished to purchase ourselves, it would be quite difficult to decide which advertiser apply to. We believe them all to be fair dealing men. Each dealer has his specialties, which are usually indicated in the advertisement.

Girdled Trees.—"R. V. M." gives the following timely advice. When spring opens in many places, the trees will be found to be girdled by rabbits. The damage should be repaired as R. V. M. directs, before vegetation starts. "With a sharp chisel, about a half or three-fourths of an inch wide, make several incisions around the tree, downward into the bark and wood just below the girdled portions. Then make several similar and corresponding incisions upward into the bark and wood just above the girdled part. Into these it runs portions of apple limbs, with the bark on, sharpened into a wedge at each end. These form a connection between the upper and lower bark, through which the sap flows upward and the elaborated juice flows downward, and if these portions are placed thickly around the tree, they soon knit together at their sides, and form a complete belt. The places of union must of course be waxed. Connecting the two separated portions of bark in this way has long been practiced, but this particular mode of doing the work by means of a chisel, is little

known and is the only one of any value, as it can be done with great expedition. It scarcely ever fails to secure union, and the wedge at each end fits so securely, as not to be easily displaced."

Feed for Milch Cows in Winter.—E. Naylor, Ohio. The quantity depends upon the size of the cow. She should have as much hay as she will eat up clean, and at least four quarts of Indian meal per day, or its equivalent in other kinds of grain. Roots are exceedingly desirable for milch cows. We err in giving too little oily and succulent or moist food to cows in milk.

The Pashas' Standard.—On page 53 reference is made in connection with a description of the beautiful flowing tail of the Thibetan Yak, to its use by the Pashas as a standard and as a badge of office. The accompanying engraving gives an idea of how they are borne. As our general officers have their rank indicated by wearing one, two, or three stars, so these officers are distinguished as Pashas of one or of two tails. Horses' tails are also used for this purpose, and perhaps more commonly.



Poultry in Winter.—Before the fowls begin to lay generally, make a careful study of them, if breeding for fancy at all, and divide up the flock; put the finest pullets with the best old cock, and the best hens with your choicest cockerels. Give six hens to one cock, and set a few clutches of nine eggs each, this month. A correspondent says the best place he ever had for young turkeys was an empty hay bay. No place could be better for the earliest broods of chickens, if the barn be light enough. Early chickens sell well as broilers, and are generally the prize-takers at the fall shows.

Care of Swine.—Take good care of breeding sows; give them warm nesting places, and plenty of straw, a few cabbages or roots occasionally, and twice a week or oftener a pint of freshly burned charcoal, pounded very fine, and mixed with meal; a handful of ashes is good now and then.

Hop-Sets.—W. Farmer, Daetah Co., Minn. —These can be safely sent a long distance by rail. The dealers usually advertise them at the proper season.

Triplets—Calves.—John P. Dodge, of Macomb's Farm, had an Ayrshire cow, which dropped three bull calves, Dec. 28th. They are half Alderney.

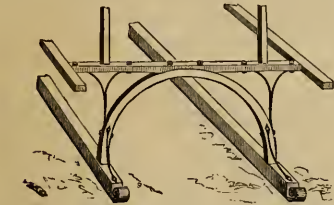
The Rinderpest in Belgium.—An alarming eruption of this disease, it is announced, has occurred simultaneously at two points below Antwerp. The infected localities were at once put under the charge of Government officials, sanitary cordons established, several animals slaughtered, and it was hoped the disease was under control.

The American Naturalist.—This popular journal of Natural History gains in value as it gets older and more firmly established. The January number, now before us, has an especially interesting article by the eminent comparative anatomist, Dr. Jeffries Wyman, on the Shell Heaps of New England. These shell heaps, often an acre in extent, and several feet in thickness, occur at various points along the coast from Florida to Maine, and indicate the favorite places of resort of the Indians. A careful examination of them shows, not only the kinds of "shell fish," which served the shore-fishes as food, but the bones of several birds and quadrupeds indicate the variety of their fare, while fragments of pottery, implements of bone, etc., give us glimpses of their domestic life. Besides the article of Dr. Wyman, there are others upon different branches of natural history, in which the subjects are treated in a manner sufficiently popular to be acceptable to the general reader, and well illustrated. Those who have been wishing for a magazine of popular science, should see to it that this one is supported not only by their subscriptions, but by their contributions. The magazine is published by the Essex Institute, Salem, Mass., monthly, at \$3.00 a year.

Canada Thistle.—C. W. Jones writes: "I have several patches of Canada Thistles on my farm, and have been at work on them for several years with the dock spade and salt, and found that I can keep them under, but cannot eradicate them, by this process. It has occurred to me whether you could not point out a less ex-

pensive and more effectual way of getting rid of them, and if so, you will very much oblige me, as well as a number of my neighbors." Smothering with a heavy coating of straw has been sometimes successful. If the patches are not too large it would be worth while to try the effect of a heavy mulch of straw, tan bark, or something of the kind.

The Arch Sleigh-Bench.—Henry H. Zabriske, of Paterson, N. J., sends us a sketch of a style of sleigh-bench, which strikes us as both new and valuable. He writes: "I work at wheelwrighting, and make what I call the arch-bench sled, which is cheaper and stronger than the old style. I made one for myself



of $\frac{1}{4}$ inch stuff, that will carry a ton weight with ease; everyone that sees it likes it, and I have more orders for making them than I can fill in a long time. If it is new to your readers, give it to them. I have eight acres of land which I never knew the good of until my neighbor got me to subscribe for the *American Agriculturist*." The size and strength of the pieces must be adapted to the use to which the sleigh is to be put. The bench consists of a rim, bent like a wagon-wheel felloe, attached to the cross-bar or beam by bolts, and substantially braced by iron braces at the sides, as shown in the engraving.

Moving Trees.—Harry Baker, Washington Co., Wis., gives his method of moving trees from the forest, as follows: "Before the ground freezes, cover the roots of the tree selected for removal with coarse manure sufficient to keep the frost out, and do the same to the place the tree is to occupy. When it freezes hard, take away the covering and mark a circle around the tree, leaving a good ball of earth; outside of the circle dig a trench, sufficiently wide to work in, and shape the ball of earth like an half orange till it rests on a pivot. Then dig the bank away for a gangway large enough to let the ball of earth through, leave it till morning, when it will be as hard as a stone; then take the team and stone boat, slip the stone boat down the gangway, use the tree as a lever, and pull the top directly from the stone boat; then slip the boat underneath the tree, and draw it up to the place where you want it, dig your hole, set the tree upright, drive three stakes around, and fasten with bay hands. The advantage of moving trees in this way is, you do not injure the limbs or the small fibrous roots, and it is surprising how easily one can move a large ball of earth with a tree stuck in it for a handle. If there is snow upon the ground, the operation will be so much the easier."

Root Grafted Trees.—There is a growing feeling that much of the trouble with young orchards in the West is due to the manner of propagation, and one of the Western Horticultural Societies has published a warning against root-grafted trees. The wisdom of this depends entirely upon what is meant by root-grafted trees. If it is intended as a protest against the practice of attaching a fragment of a root to a cion, and trying to make a tree of it, we in the main agree with it. If, on the other hand, it is intended to include those trees formed by grafting upon the collar of a seedling stock, we must dissent. Both reason and practice teach that trees grown in this way are as good as those produced in any other manner.

"Rotten Root."—Among the causes that produce death in young trees is the disease known as "rotten root." The matter was discussed at the recent meeting of the Northern Illinois Horticultural Society. Mr. Walsh ascribes this to the "woolly aphid," which attacks the roots and causes large excrescences, followed by decay and the death of the trees. The remedy proposed is to examine the trees in the spring, and if any insects are found, which may be recognized by the cottony substance which envelops them, to apply hot water.

Forcing Vegetables.—J. H. S., Montreal, Canada. This is done only in a small way in this country, and in hot-beds. It would doubtless pay well near all our large cities to have regular forcing houses. The first outlay is of course considerable, but a properly managed house will give several crops in a season, and its products will meet with a ready sale. The best house

is doubtless that described by Mr. Henderson in his *Gardening for Profit*, where drawings and measurements are given as well as directions for its management.

Macaroni.—R. G. Honeybrook, Pa. Your trouble, which resulted in making a "mush" of your macaroni, was probably due to your getting the American article and not the Italian. The imported is made from a wheat containing a great deal of gluten, and cannot be successfully imitated with common wheats. Get Italian macaroni, break it to a convenient size, and put it in boiling water to which a little salt has been added, and boil gently until done. It can then be dressed in various ways. If you wish it *a la Milanese* put it in a tin pan or pudding dish, grate cheese over the surface, and brown in a quick oven. Dressed with butter and a little milk it is very nice, as it is when served with any good gravy. Macaroni is not very expensive and to our notion is a most welcome article on the dinner table.

Tea Pottery.—"Subscriber," in New-London, Ct., says: "My good wife is one of those who believe that nothing equals the black earthen pot to infuse or draw tea in; and these being perishable, because unfitted to stand sudden heat, she has generally found it for her advantage to purchase them by the dozen. She has a way to prevent breaking that may be useful in other families, viz., always keep somewhere on the top of the range, or stove, the sancer of an earthen flower-pot, which costs little or nothing. When needed, she draws it over a better portion, and sets the tea-pot in it. If by chance the sancer is broken, little harm is done. As the result of this course for six months, she reports only two saucers broken, and the pot remaining whole."

Meerschamm.—J. S. Witner. The material of which the true Meerschamm pipes are made is a mineral found in some parts of Turkey and Greece. Chemically it is a silicate of magnesia and in composition allied to soap stone. If being very light, the fanciful name Meerschamm, from the bottom of the sea, was given to it, which has led to the not uncommon idea that it is in some way prepared from sea froth. In its rough state it looks like a lump of very white clay. It is easily carved and worked into shape, after which it is put into boiling wax, and then polished. Imitations are made so like the true article that only an experienced eye can tell the difference.

Good for Maine.—A daily paper says that the Maine ladies trim a large pumpkin seed with fur, and use it for a bonnet, the large end being worn in front, to protect the forehead. We shall welcome any style of ladies' head-dress that is worn with a view to protect any part of the head. Any change must be for the better.

Dickens' Works.—The advent of this most popular of living authors, and his public readings, have given new life to the old editions of his works, and have called out several new ones, varying in style and in price. Some of the very cheap editions are in such small type that they are not to be commended to those who have any regard for their eyes. T. B. Peterson & Brothers, Philadelphia, publish several editions, ranging in price from 75 cents, in paper, to \$3 a volume. That called the "People's Edition," with each work in a large duodecimo volume, is on good paper, in clear type, and strikes as being, at \$1.75 a volume, the best of the moderate priced editions, and cheap for the quality.

Erratum.—In the January number, page 21, in speaking of the European Mistletoe we by a slip of the pen called it *Viscum flavescens*. It should of course have been *V. album*.

Canker Worms.—In some places the tent-caterpillar is mistaken for the canker-worm, but the two are quite different in their habits, and the span worm, also called canker-worm, is different from either. The females of the true canker-worm are wingless; they form their chrysalids in the ground and come out of these in early spring (sometimes in autumn), crawl up the trunks of the trees, and there lay their eggs, from which are hatched the destructive worms. All the methods of combating this insect have for their object the preventing of the female from ascending the tree. Numerous things have been proposed in the way of obstructions, from tarred paper to very ingenious troughs to be kept filled with liquid. There are many of these that will answer, if properly attended to, and all are perfectly useless, if the barrier, whatever it may be, becomes passable by drying, or becomes bridged over by ants, or even down insects. In 1865 we published an illustration of an easily made protector, which, as it has been inquired for several times, we reproduce. Pro-

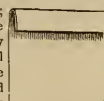


Fig. 1.

cure a strip of tin 3 inches wide and long enough to make a ring to encircle the tree, and leave 2 inches space all around between it and the trunk. Turn over one edge of this tin as shown in figure 1. A piece of cotton cloth, as long as the tin and rather wider, has a hem upon one edge to receive a cord, and the other edge is fastened to the tin by placing it in the fold and hammering close. The manner of application is seen in fig. 2:



Fig. 2.

Lyman's prescription, of equal parts of kerosene and castor oil; this is fatal to insects and keeps in good condition for a number of days, but should be renewed once a week. Any one who is really in earnest in protecting his trees, will visit them every day or two to see that the protectors, no matter what kind is used, are properly adjusted and in good working condition.

Spring Budding the Peach.—F. H. Culton. The earliest time at which this can be done is when the stocks are in full leaf and the bark will separate from the wood, or "run," as ourserymen say. The cions to furnish the buds must be cut while still dormant, and kept so by placing them in an ice-house.

The Westchester Co., N. Y., Agricultural Society.—At a recent meeting for election of officers for the present year, made choice of Mr. Warren Leland, as President. Mr. L. resides in the town of Harrison, where he has a fine farm of 500 acres, 450 of which are under cultivation. This is said to be one of the best cultivated farms in the country, and we have no doubt it is cultivated with profit, there being in this case no middle men between the producer and consumer. Mr. Leland's fondness for agricultural and horticultural subjects is well known, and the society certainly has secured the services of a very efficient officer.

The New York Fertilizer Market.

—The price of fertilizers along our seaboard is regulated a good deal by the price which they bear in New York. This is especially true of bone-dust and the superphosphates. The changes which take place in the prices, are usually gradual, and commonly upwards. There are a number of kinds of "superphosphates" in market, passing under a variety of names, animalized, ammoniated, etc. It would be an exceedingly useful thing if all the prominent fertilizers, especially superphosphate, could be subjected to examination by competent chemists, and their results published. The manufacture of superphosphates presents an unusually attractive opportunity for rascals to defraud the unsuspicious. The prices of some of the most reliable fertilizers are as follows:

No. 1 Peruvian Guano.—The price for this article varies with the premium on gold. At present, with gold at 35 per cent premium, it is selling at \$35 per ton of 2000 lbs.; with gold at 40 per cent, it would be worth \$50.

Baker and Jarvis Island, (South Pacific Phosphate.) Guano.—\$45 per ton. These can be treated with sulphuric acid, the same as bones, thereby making a good superphosphate; they should contain an equivalent to 60 to 70 per cent of basic phosphate of lime.

Superphosphate of lime.—\$25 per ton, in bags of 160 lbs., and barrels of 250 lbs. Raw bone superphosphate, \$35 to \$56 per ton in barrels of about 250 lbs.

Fine Ground Bone Dust.—In barrels of 250 lbs., the barrels tarred, \$45 per ton; floor of bone, \$60 per ton; fish floated bone, \$65 per ton.

Fish Manure.—Finely ground, \$45 per ton; not ground, \$30 per ton.

Gypsum or Land Plaster.—Ground, \$1.75 per barrel, by seven barrels or more; a barrel will weigh about 250 lbs. Shell Lime.—10 cents per bushel, or \$1.50 per barrel.

Sulphuric Acid, 66° (Oil of Vitriol), 2½ cents per lb.; Sulphuric Acid, 60° (Pan Acid), 2½ cents per lb. Carbonyl, \$3 each, (returnable); they contain about 150 lbs.

Lead Pipe—Lead in Water.—"E. C. S." asks if the illness of his horse is due to his drinking water which came through a lead pipe. It is not easy to

tell without knowing more about the case. As a general thing, spring water is not apt to be contaminated by lead; at all events, the risk is removed by using the tin-lined pipe, which is just as cheap and perfectly safe....A. B. Rags. The quantity of lead in water that has passed through lead pipes is so small that while its detection is easy to the chemist, it cannot be made with any certainty by those not familiar with chemical operations. If you wish to make the experiment, add a few drops of vinegar to the water, and gently evaporate a quart or so in a china bowl or plate to a wineglass-full. Dissolve a bit of Iodide of Potassium, (to be had of the druggists,) the size of a pea, in half a wineglass of water, and add it, a drop at a time, to the concentrated water in another wineglass. If lead be present a yellow cloud will appear in the water, and upon allowing it to stand, a yellow powder (Iodide of Lead) will settle to the bottom of the glass. Great caution should be used in adding the solution of Iodide, as an excess dissolves the yellow powder.

Grasshoppers.—Atchison County, Mo., was plagued with grasshoppers last year. G. Steiner writes: "They have eaten up all the winter grain, and have done the cabbages and other late crops great damage. In May last, the eggs laid last fall hatched by myriads, and the insects remained with us until the middle of July, when full grown. Then they rose up of one accord, and all left at once. On the 20th of September, they returned in clouds that darkened the sun, and at the time I write, they have laid their eggs in the ground. Last spring they destroyed all the spring wheat and oats, and did rye and other crops much damage."

Plaster vs. Stable Manure.—T. Lee, Mich. On many soils remote from the shore the effect of plaster is magical, bringing in white clover and securing a strong growth of grass. If this is fed off by cattle remaining upon the pastures, the land increases steadily in fertility. Plaster is not, however, a substitute for manure. Four and a half miles is a long way to cart stable manure. We should prefer to cart night soil, if it can be obtained for the carting, as it can in most towns and villages, where they are anxious to get rid of it. This is generally the cheapest source of fertilizers to suburban farmers. Dead animals from the city streets are also used to great advantage. Wood ashes, and the wastes of woolen factories, and of tanneries, are generally worth much more than they cost. Spread plaster on pastures, one or two bushels to the acre, and sprinkle it about the stables. It also may be used in the hill, with corn and potatoes, with good effects.

Hedge in Maryland.—"Hedge," Kent Co., Md., wishes an evergreen hedge, and we give his letter for the most part entire, as it and the answers will interest others, and it also shows how questions crowd upon us. This letter has been on hand for a long time, for the reason that there were so many queries that we saved it to make it the text of a longer article than we usually put into the "Basket," but finding no space elsewhere, we reply here. (1) "I wish to plant a fancy or ornamental hedge, that will turn stock, on each side of my lawn or front yard. I prefer evergreen. (2) Holly is very slow; how would it do to set out a row thickly with young Holly trees, say as large as your wrist, cut off the tops to four, five, or six feet, and then, in a year or so, when the plants were started vigorously again to growing, to lay or slash them? Or cut the plant down to the ground when first set out? (3) How are Holly hedges usually made? (4) What would you say of the *Mahonia aquifolium*, (Holly-leaved Barberry or Mahonia Barberry,) and how best propagated? (5) Your opinion of the common Barberry, (*Berberis vulgaris*)? (6) How would the *Taxus baccata*, (European Yew,) answer the purpose? How best managed, etc. Is it an expensive plant, and do the nurserymen usually furnish it? (7) I have a small farm, nicely and publicly situated. I am putting an Osage Orange hedge around the whole place, (an mound all around by road), and wish to divide the lawn and front yard by this fancy hedge. (8) At Wilmington, Del., we have *Willows* of which *powder* and *baskets* are made; we call it the *Powder Willow*. Is that the *White Willow* for live fence?"—1. None of the Pine family will make a hedge that will turn stock. 2. The only way to get a proper hedge is to start with young plants, and make a good growth from the base. It would take much longer to get plants of this size established, and in shape,—if it could be done at all. The treatment for the Osage Orange would not do for the Holly, as one is a rapid grower, and the other a very slow one. 3. Holly hedges are but little known in this country. In England, great stress is laid upon a well and deeply worked soil, in order to get as rapid a growth as possible. Young plants are set at a foot or eighteen inches apart, and treated as other hedges. 4. This will not make a hedge that will turn stock, but very handsome as a division hedge, with the fault, at the

North, that the leaves turn black in winter. Readily raised from seed. 5. We think highly of it, but it is not an evergreen. 6. Will not turn stock, and too uncertain unless you wish to experiment. May be had at the nurseries at a not very high price. 7. If you wish a "fancy hedge," and one that will turn stock, we do not know of anything better than the Holly, if you can wait for it. Why not keep the stock away, and then Hemlock, the most beautiful of evergreen hedges, can be used. 8. The White Willow and the "Powder Willow" are the same, and the one used at the West for fences. It would not answer your purpose as an ornamental hedge.

Pine Leaves as a Mulch.—"W. H. L." writes: "In the Dec. No. you recommend covering strawberries with Pine straw, or rather the foliage from the Pine tree, which I carefully rake off the grass, as it falls, as it appeared to me to kill the grass on the lawn where it laid. Will not the use of it on the strawberry sour and injure the soil so as to interfere greatly with the sweetness or quantity of the crop?"—The effect on the grass is merely mechanical and not due to any injurious quality in the Pine leaves. A covering of any kind is injurious to grass when it is growing. With strawberries the case is different. We wish to cover the soil to prevent alternate freezing and thawing, and, if the mulch is allowed to remain, to keep down the weeds. Pine straw has been used largely at the South for such purposes, and we never heard of its producing any untoward effects.

Weeds.—"J. W. K., Quincy, Ill., asks "Is there any way to exterminate what we call here wild sweet potato vines, or wild morning glory vines?" We have frequently stated that there is no specific to kill weeds. There are but two ways of getting rid of them: Put the hand in some crop that requires constant working, and cultivate it diligently, or use a crop that will grow so luxuriantly as to crowd out the weeds.

Poppy Culture.—"J. C. L., Montgomery, N. Y. An attempt was made early in the present century to cultivate the Poppy for opium. We have forgotten why it failed, but as the production of opium is much dependent upon a suitable climate and very cheap labor, we do not think that this and similar cultures can be undertaken in this country with a prospect of success.

Buckthorn Hedge.—"J. S. E., Afton, Iowa, says: "Please give us some information through your columns or by letter, with reference to the Buckthorn or English Hedge, of its adaptation to our climate, and durability as hedge." The "English Hedge" is the Hawthorn, and the Buckthorn is comparatively little used in England. Some of the best hedges we have seen have been of Buckthorn, and we are at loss to know why it is not more used. Its hardiness adapts it to northern climates, it grows well, is not liable to be attacked by insects, and holds its leaves well into autumn.

Beans for a Name.—Thos. Bragg, Railway, N. J. Apparently the White Runner; this is a white variety of the Scarlet Runner, so much used as an ornamental climber. The beans are often sold for the Lima, to which they are much inferior, though of fair quality. The plants are decidedly different in appearance, and the ripe bean is thicker and much whiter. It has quite a number of local names, and is, we think, advertised by some dealers as new, under one or more names.

Bees in February—Advice to Beginners. by Wm. W. Carr.—"The directions in the Apisary for last month are still in force. It is customary at this season to purchase bees. Being comparatively light in stores and in numbers, they can be moved with less risk of combs breaking down, or of smothering, than after May. As there is but little to do in the apisary this month, beyond seeing that the hives are properly ventilated, and the entrance so contracted as to prevent a strong current of cold air blowing on the bees, and to exclude mice, I will give a few hints to beginners in bee culture. In the first place, buy none but strong, healthy stocks; it is better to pay twenty dollars for such a colony, than to pay five for a diminutive starveling, which will neither produce surplus honey nor give an increase of swarms. To build up a weak colony and make it prosper requires experience for success; beginners should let it alone, and neither be anxious for a rapid increase, nor dwell on the deceptive beauties of geometrical progression in counting upon the number of stocks one may be the owner of in a few years. Many persons engage in bee culture, expecting to amass a fortune in a short time, and by a little mismanagement sustain a heavy loss instead of realizing a handsome profit on the money invested. Improve the long winter evenings by consulting the best authors, Langstroth and Quinby, and question persons in your neighborhood who have met with the greatest success. Procure the best hive; in this, no

your judgment. I prefer the Langstroth. Keep none but strong colonies. If the beginner will exercise a good share of common sense, experiment cautiously, he will thus avoid involving the welfare of his apisary in the success or failure of a single venture, and will be pretty sure to meet with encouraging success in bee culture.

Hotels in Europe.—We so often meet subscribers, who recognized us from the register of names at the hotels in Europe, that we conclude very many of our readers travel abroad. And why should not this be the case? The enterprising people who accumulate money for traveling are quite likely to avail themselves of the advantage which such a journal as this affords. As many others of our hundreds of thousands of readers are likely to visit foreign lands, we may well give from time to time any useful hints drawn from experience or observation.—Every American traveler knows the difficulty of choosing a good hotel in the different cities in Europe. The guide books, especially the one most carried by Americans, often commend only those houses which pay the highest bounties. (Thus, for example, at Interlaken, Switzerland, there are many good hotels, but as we incidentally learned, the author of the guide book received 500 francs to name but one. Of course, we found a portion of the 500 francs in our bill, at that hotel.) As the European hotels charge by the items, there is good opportunity to reckon these up to any desired sum—all the traveler will stand, usually. Candles, or "tallow droppers," are almost always charged for, at three to six times their cost. Most of the hotels are neat and well kept; some of loud pretensions are far from neatness and comfort. We name here some which we found all right as respects comfort and reasonable charges, starting some where we found extra comfort. Cork, *Royal Victoria*; Dublin, *Graciosa*; Belfast, *Imperial*; Portsmouth, *Antrim Arms*; Edinburgh, *Waterloo*; Brussels, *Bellevue*; Amsterdam, *Amstel*; Cologne, *Bellevue*; Frankfurt, *Union*; Dresden, *Bellevue*, also *Victoria*; Berlin, *Hotel de Rome*; Stockholm, *Rydberg*; St. Petersburg, *Hotel de Grand*; Moscow, *Ducasse*; Warsaw, *L'Europe*; Cracow, *Stare*; Munich, *Four Seasons*; Mt. Ricci, *Rigi Staff*; Andermatt, *St. Gotthard*; Faido, *Angelo*; Magglingen, *Bellevue*; Stresa, *Borromean Isles*; Domo d'Ossola, *Grand de la Ville*; Briga, *Angleterre*; Martigny, *de la Tour*; Geneva, *de la Pale*; Berne, *Schweizerhof*; Turin, *L'Europe*; Milan, *Carroz*; Verona, *Londres*; Venice, *Bauer's Grand Hotel de la Ville*; Bologna, *Bruni*; Florence, *New York*; Leghorn, *Washington & Victoria*; Rome, *Angleterre*; Naples, *Hotel de Russie*. We omit cities where the hotel selected was more or less unsatisfactory. At London, the *Langham's* is a really grand hotel, much frequented by Americans. Those who wish less display of fashion and dress, and lower prices, will find very comfortable quarters at the *Queen's Hotel*. We have tried both. As most persons remain there two weeks or more, the preferable way is to seek what are termed "lodgings" or "apartments." One can get good well furnished rooms, with service, cooking, etc., at moderate stipulated rates, and order whatever he likes for each meal, paying only its cost. In this way he has all of the comforts of a home, just such food as he desires, or the market affords, and as cheaply as he could live at home. We found a good home at Mrs. Clive's, No. 6 Upper Woburn Place, adjoining Tavistock Square and Dickens' city residence. (The streets in this quarter are barred against carriages from sundown to 8 A. M., which renders them very quiet.) In Paris, in 1892, we found the *Grand Hotel de Louvre* an excellent residence, at reasonable rates; in 1897 it was exorbitant in its charges and pretensions, as were most Paris hotels. One will enjoy more quiet and comfort at less pretensions but good homes, like the *Hotel de Londres*, on Rue Castiglione, and others of its class. In Vienna, all the hotels are said to be pretensions, and rather proud of their reputation for high charges; we found the *Archduke Charles* of this class, and would try another if going there again. At Luzerne, there are several good hotels, full and expensive in the "season." The *Hotel Balances* is reasonable, quiet, and has some very good rooms, with balconies over the water; table, good. The worst of all the hotels we were forced into, was the *Hotel de Londres et Post*, at St. Michael, before crossing Mt. Conis. The other hotel there cannot be worse, and may be better.

Milking—How Often Should it be Done?

An experienced dairyman discusses at some length, in the *Agricultural Gazette*, (Eng.), the number of times a cow should be milked daily. We need not give his views in full, but they are decidedly in favor of milking three times a day instead of twice. His argument for a more frequent milking is founded upon the fact that a cow with the calf by her side, in an

abundant pasture, where she can soon get her fill, will feed four times in the twenty-four hours, and have an equal number of times for ruminating, and that the calf will suckle regularly at times corresponding with these. While he does not think that milking four times a day is advisable, as we are able to depart from the natural course of things within certain limits, yet he holds that thrice is nearer to the manner in which the cow is milked by the calf than is twice, and that cows, milked three times a day, have a tendency to convert their food into milk, rather than into fat, while with a less frequent milking, the secretion of fat is more active. He says:

"The reader will bear in mind that we are confining our observations to cows fed on highly nourishing food—the starving system of the olden time having been thrown overboard; and the question now under notice, of cows being more liable to go dry and run to fat when only milked twice a day than when milked thrice, must appear so plain to those who have any lengthened experience in the matter, as hardly to require a word of detailed argument to fortify the conclusion. Thus, according to our own experience, there were about 14 hours between the evening and morning milkings, on the bi-meal plan, and 10 hours between the morning and evening. In some town dairies, the length of time between the evening and morning meals is greater, and that between the morning and evening, less. During the summer months, we have had only 13 hours between the evening and morning, and 11 between the morning and evening, the times being thus more equally divided. Under the three-meal system there were ten hours between the evening and morning, and seven hours between each of the other two meals; the night interval in the summer time being shorter, and the day interval longer. Such being the facts of the case as to the length of time, upon which the argument hinges, the reader will perceive that, assuming the ruminating, digestive, and secretory functions equally healthy and active in both cases, the milk remains four hours longer in the udder of the cow under the two-meal system than under the three-meal system over night, and twice these hours during the day. The effects of this difference upon the functional economy of the cow generally is obviously to increase her carcass weight, and reduce the quantity of milk secreted between meals. In discussing this question, it must further be borne in mind that both these processes—the manufacture of meat, if we may so call it, and the manufacture of milk—are continuously going on in a healthy cow; so that it does not require much force to turn the balance either way, more especially when there is a natural tendency to the secretion of fat, especially over night, and the adverse to the secretion of milk. In principle, the argument of milk remaining in the udder for a length of time after it has been secreted, is identical with that of leaving a portion in the udder after milking. No doubt sour brewer's grains and distiller's wash may be given to cows in quantity sufficient to stimulate the secretion of milk, and counteract the tendency to run to fat, but the practice is out of date, and the argument which it involves unworthy of the present enlightened age.

"In those localities where cows are only milked twice a day, there would doubtless be many objections raised in the adoption of milking three times, even in examples where all the milk is consumed upon the farm. But those who raise this objection should first bear in mind that their present practice took its rise in

times when cows and calves were half starved, conditions which do not apply in the present age; second, in those districts where three times milking is the common rule, no difficulty is experienced in getting servants to attend regularly to the hours of feeding and milking.

"As to commercial dairies, where the whole of the milk is either sold wholesale or in retail, the third meal may be used for raising cream, or a portion of it, the remainder being warmed and mixed with the morning milk, which would rather improve the latter than otherwise, the evening milk being richer than the morning milk. This, we may observe, is no hypothetical proposition, but the actual practice successfully followed in those districts where cows are milked three times a day—large towns in them being better supplied with new milk, butter, and cream, than towns situated in districts where the two-meal system is exclusively practiced. In short, no valid objection can be raised to the three-meal system, if dairymen would consult their own interests, and the welfare of their cows, free from craft prejudices."

Farm Laborers—Prospects.

The time is at hand in the North, for securing labor for the approaching season. The hired man, in the good old times, began his work on the 1st of April, and the term of service was for 6 or 8 months. A longer term did not suit his convenience, or that of his employer. He could teach school in the winter, or strap on his trunks and peddle, tend saw-mill, or butcher pigs, and make more money than he could on the farm. And, then, in the days of homespun, with all due allowance for the many virtues of our fathers, there was not quite so much enterprise in winter as now, and comparatively little was done upon the farm. The hired man got 9 or 10 dollars a month for his summer labor, and thought he did pretty well. Now the average price of labor in the Eastern States is 33 dollars a month, and for the whole country, 28, as last reported by the Commissioner of Agriculture. We think there must be a little reduction from these prices the present year. There has been a large accession to our population from Europe, the most of them males, in the prime of life, who have come to this country seeking labor. They have strong hands and willing hearts, intent upon improving their fortunes and in due time getting homes of their own. Many of these go West, but multitudes linger at the East, and can be employed at reasonable prices upon the farm. Then it is to be considered that our manufacturing interests are somewhat depressed, and wages are reduced from ten to twenty per cent., and some establishments are stopping. This will throw some out of employment, and they will seek support upon the farm, which alone has bread enough, and work for all.

The prospects for agriculture the coming year are exceedingly promising everywhere, except in the cotton states. We have raised, the past year, the best wheat crop ever produced in the country, and the prices are satisfactory. The corn crop, short in some states, was, on the whole, an average, and the prices high. Potatoes were a very short crop, and the prices higher than for many years. With a few exceptions, everything the farmer produces brings a good round profit on the cost of production, showing that the business can be safely extended. We think, as a rule, our Northern farmers do not employ as much labor as they ought, to make their business profitable. They are content to

rub along, just supporting their families, when they might do this and have a handsome surplus by using more labor. It costs very little more brain work to direct the labors of six men than the labor of one. If there is a profit in hiring one man, there is six times the profit in hiring six, other things being equal. Of course, it requires more capital and more care. There can be no doubt that farming pays with present prices, and we hold that land is profitable just as we expend labor and capital upon it. If any man has any doubt upon that point, let him plant an acre of corn, applying fifty dollars' worth of stable manure, and giving thorough cultivation, and compare the result with little or no manure and poor cultivation. Labor is much higher than it used to be, but farm crops sell enough higher to make up the difference, and leave a margin for profit. We have no doubt that multitudes of our skillful farmers would greatly improve their fortunes by using more labor and enlarging their business. They have skill enough and capital enough, if it were put in the right place. The markets show clearly enough, that we want more hay and grain, more beef and butter, more potatoes and poultry, and that all farm crops pay well for raising. The manufacturer and merchant are very much in doubt about their ventures now, and some are failing. The farmer has no solicitude of this kind. He may extend his business and thrive.

Get skilled labor if it can be had, but if not, use the emigrant. Many who come over have been trained to farm labor, and very soon adapt themselves to our methods. If the farmer can be in the field with his help the most of the time, skill is of less importance. One of the best hands we ever had, began work with us the day after he landed, and staid with us six years. If a green hand has aptness he will acquire skill, and after a few months will be as serviceable at most kinds of work as the best hand. There is no difficulty in getting emigrant labor, in any quantity, and at reasonable prices. Thousands of them come to our shores every month and are eager to secure places. Give them a chance to earn their bread, and to make homes for themselves upon land of their own.

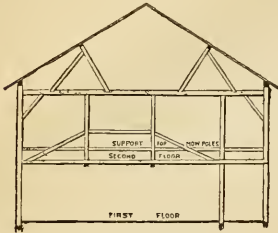
SOFT-SHELLED EGGS.—An English poultry manager suggests the following treatment:

"When a hen lays this sort of egg, and not habitually, the occurrence is generally accompanied with hard or full crop. In that case, it is owing to indigestion, to be treated with one or two teaspoonfuls of English gin. One cause is said to be over-feeding when fowls are too fat. These eggs are generally dropped from the roost, and if it is not too high from the floor, or if they fall on straw, may be saved entire, and used for puddings. As to symptoms, experience will make known the indications, and the time when a hen is about to pass one of these eggs, by appearing somewhat dull and uneasy when walking about; when proper precautions should be taken to secure it, and prevent the other hens from gobbling it up. The writer has a favorite hen, which always regularly drops these eggs from her roost, and never lays any others, and has done so for these five years past, although in perfect health."

Probably the medicinal effect of American gin would be quite as efficacious as that of "English." We give his statement for what it is worth, with the remark that the trouble is usually considered due to a lack of lime in the food, and this is supplied by giving the hens shells, bones, and other forms of lime.

Framing to Secure Wide Floors in Barns.

Wide floors, unobstructed by posts, are often a great convenience in barns, and as it is desir-



TRUSS-BENT FOR BARN.

able to know a good way to frame a bent so as to dispense with posts and make it a self-supporting truss through a part of its length, we have had the accompanying figure engraved. It represents a truss-bent in the barn of Rev. David R. Waller of Bloomsbury, Pa., which supports the second floor of the barn, on one side, and a hay mow upon the other. The barn has two stories and a basement, and all the hay and grain is drawn in upon the second floor, over a bridge, from an approach walled and banked up. This truss is of simple construction, philosophically braced and entirely secure. The size of the timbers would vary with the width of the barn and the extent to which it is self-supporting, as well as with the weight it is expected to sustain.

A MILK PRODUCERS' ASSOCIATION.—Boston people are proverbial for having notions, but it usually happens that "Boston notions" are good ones, as witness a late meeting to form a Milk Producers' Association. We are glad to see any movement that will tend to bring the producer and the consumer nearer to each other, as it results in the farmer getting more for his articles, and the non-producing consumer receiving more for his money. Those who supply the Boston market with milk, naturally enough object to that state of things, in which the producer receives $3\frac{1}{2}$ cents a quart for his milk, which is sold in the city for 8 $\frac{1}{2}$ cents. We quite agree with them in the conclusion that 5 cents a quart is rather too much to pay the middle man. At the meeting in Boston, an organization was effected, by the adoption of a constitution and by-laws, but we fail to get, in the account of the proceedings, an idea of just what they propose to do. But infer that their course will be such as will bring a greater share of the proceeds of the sale of milk into the hands of the farmer. We are glad to see anything that looks like co-operation among farmers, and any indication that the same tact, talent, and energy is obtaining in agriculture that is an absolute necessity in other kinds of business. We cannot see why co-operation in the milk business should work to the detriment of any but the middle men. It would be easy, practicable, and profitable, in any community where milk is supplied to a large city, for the milk producers to make a co-operative or joint stock company, and engage a man of known business talent and integrity to see to the transportation of the milk to market, and its delivery to retailers. We have no doubt that such an organization, well managed, would pay good dividends to the farmers.

ANOTHER FORAGE PLANT.—It was not long ago that the French journals were full of accounts of the Brome de Schrade, *Bromus Schra-*

deri, or Rescue Grass, over which a great amount of enthusiasm was expended. Now we have one of our wild grasses extolled, under the name of Perennial Millet—*Millet vivace*—as a very valuable forage plant. The grass in question is *Panicum virgatum*, a coarse, reedy grass, that grows in moist, sandy soil; it has long and flat leaves, and an open, large panicle; it grows four or five feet high, and is perennial. The French writer has experimented with a small patch, and though its tendency to form clumps does not altogether suit him, yet he thinks that it is one of the forage plants that furnish the most vegetable matter upon a given space of ground. He states that all sorts of animals are very fond of it; it does not speak very well for the taste of French animals if they fancy such coarse food. Probably the number of our pasture grasses might be advantageously increased, but we doubt if the coarse-leaved and coarse-stemmed *Panicum virgatum* will be one of them.

The Department of Agriculture.

In last month's *Agriculturist* we announced the appointment of Col. Capron as Commissioner, but were very chary of giving him any praise in advance, for we knew we should soon be obliged to find fault with him. We gave him warning that we were watching his acts, but that did no good,—he has acted, and we are "down on him." We learn that the new Commissioner has abolished the seed-shop and seed distribution. Oh! Colonel! now you have done it, and in the name of many injured people we protest. Mortals are weak, and power is a dangerous thing to trust in their hands. We wished you well, but seated in your place only a few short weeks you go and "bust up" the great "National Seed Shop." We protest—in the name of the people in general, or of individuals in particular. We protest in the name of the seedsmen: where else will they be able to dispose of their old stock? What are certain Philadelphia seedsmen to do now, when Lima Beans and Hubbard Squash can no longer be sent forth by the mail as novelties? We protest in behalf of Senators and Representatives in Congress. Where can their poor relatives and other dependants find occupation, now that they can no longer put up seeds? How many votes will be lost at the next election for the want of a few pole beans! We protest in the name of the people, and there is where we have you, Col. Capron. Did you think what a great agency for the education of the people that seed shop was, and how its most practical lessons will now be wanting? When *Echium vulgare* was sent out for a bee plant, didn't the farmer learn the botanical name of one of the worst of weeds, and didn't he have to exercise his ingenuity to get rid of it? When seeds of tropical plants were sent to Wisconsin, did not the farmers there learn the useful lesson that every kind of plant would not grow everywhere?

We protest in the name of the poultry. Many a poultry yard will miss its accustomed variety in food; formerly it was something to be a fowl belonging to a friend of a Senator or a Representative, as several times a year it had food, which if not very good, was at least expensive, and was bought by Uncle Sam's money, was brought by the U. S. mail, and was fed out by a friend of a friend of Uncle Sam. It must be a poor cock who couldn't fancy himself the American eagle upon such food.

Finally, we protest in our own name. An interesting portion of correspondence must

cease. The inquiries as to what are Alfalfa, Bene, Sanfoin, and other things sent out without any intimation as to their uses, will come no more, and we shall no longer have the satisfaction of telling our friends what is food for their cattle and what is food for themselves.

Seriously, Mr. Commissioner, we congratulate you upon having done the only possible thing with the national seed shop. Instead of trying to reform it, you have abolished it altogether, and in doing so you have abolished one of the most unfair, corrupt, and useless parasites that ever sucked blood from the treasury.

More Gates and Fences.

A Maine correspondent sends us sketches of a convenient farm or door-yard gate, which we represent in fig. 1. It is simple, and easily made, as the rollers or wheels upon which it moves are such as barn doors are hung upon, and may be obtained of most hardware dealers, or at well furnished country stores. The gate rolls open and shuts on a line with the fence, and on a perfect level. The latch stile is made of two pieces, and has a wheel at the bottom, as shown in the cut. This may be an iron wheel with a groove, and made to run upon an iron rod; or it may be flat-edged to run in a groove. The hinge style, if it may be so called, has a grooved wheel, or roller, attached to the upper part of it, which rolls upon a rod of iron,

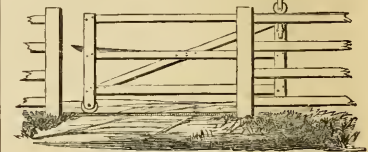


Fig. 1.—SLIDING GATE.

made fast to the upper rail of the fence. The whole contrivance is very simple, and any one with a slight knowledge of the use of tools may make such a gate. It is not subject to be blown open nor to be slammed to pieces by high winds, and the task is much easier to clear away the snow for it to slide back and forth, than to make room to open a swinging gate.

The accompanying sketch of a substantial stone fence is received from the same correspondent, who would, we presume, hardly recommend it as economical for the farmers of the Grand Prairie, however suitable it may be for those who earn their bread upon the granite hills of New England. Figure 2 represents a fence made of granite blocks, each one foot square, and six feet long, set upon blocks a foot in height. The granite or gneiss rock of some



Fig. 2.—A GRANITE FENCE.

sections splits into rectangular pieces with great ease, the cracks following natural planes of cleavage, at least in one direction. This enables those who can procure such stones, to use them as building material, and for fences, either in the way shown, or as posts, iron dowels being set in to support rails. They make most excellent gate posts, and it is often well worth while to be at considerable expense to procure such, especially where the situation is of a character to cause common wooden posts to rot rapidly.

The Bovine Family—The Yak.

Animals of the *Bovine* family are found native in almost all parts of the world, South America and Australia being, we believe, the only countries of any extent having no indigenous oxen. The genus *Bos* includes all the animals properly called bovine. They are all distinguished from other ruminants by smooth, hollow horns, directed more or less sideways, and curved upwards or forward, in a semilunar form; bodies, thick and heavy; tails, long and terminated by a tuft; udder, between the hind legs, and having four teats. The males are called bulls, the females, cows, and the young, calves, whatever the species. A considerable degree of confusion has existed among naturalists in regard to these animals, and they have been forced to base specific distinctions upon characteristics which in the different varieties of domesticated species vary greatly. The species now included by naturalists in the genus are the following:

1st. The Urus, or Aurochs, or Bison, *Bos urus*—nearly extinct, closely related to the American Buffalo. One fine herd is preserved with great care by the Emperor of Russia, in the forest of Lithuania in the province of Grodno.

2nd. The American Buffalo, *Bos Americanus*. Distinguished by a flat, fleshy hump upon the neck and shoulders, caused by a prolongation of the spines of the backbone, and a long, shaggy coat.

3rd. The Gyal or Jungle ox, *Bos frontalis*,—a domesticated race closely resembling the common ox, existing in the mountainous districts in the north-eastern part of India.

4th. The common ox, *Bos taurus*.

5th. The Buffalo, *Bos bubalus*. Distinguished by horns turning backward, a rounding forehead, no hump, little or no dewlap, and a slender, tufted tail. Found both wild and domesticated in

Southern Asia, and domesticated in Asia, Southern Europe, and Northern Africa.

6th. The African Buffalo, or Caffer ox, *Bos Kaffer*. Distinguished by horns very broad at base, transversely wrinkled, and of great size; the animal is the largest of the ox family, ears large and half pendulous, hair prevailing short, but shaggy about the fore quarters.

7th. The Yak, or Grunting ox, of Thibet and

Tartary, *Bos grunniens*. This is an exceedingly interesting animal, and it is to be regretted that so little is known from which an accurate idea of its economical value can be determined.

There are both wild and tame varieties in the mountains of Thibet. We present a picture engraved from the photograph of a bull in the botanical and zoological garden of Paris (*Jardin*

brushes, and, taking color easily, they are dyed of all gaudy hues. They are, besides, used by the Governors of provinces under the Turkish Government as badges of rank, two or three being borne upon a spear before the officer, who is known as a "Pasha of two tails," or of "three tails," as the case may be. Tails of white horses are also used, but those of the Yak are preferred, being more costly and beautiful. (See "Basket" item.)

There are several varieties of this animal in Central Asia, and these varieties are so great as only to be accounted for by travelers on the supposition that they have been crossed with domestic cattle or with the zebra of India. Our knowledge of the facility with which crosses with the buffalo are made renders it probable that this species, which, in some respects, seems still more closely allied to the domestic ox than the buffalo, may be capable of

being similarly crossed. Some Yaks fully equal in size large oxen; others are not much larger than sheep. In some the hump is covered with a full mane, or rather great masses of soft, long hair; in others there is comparatively little. All have the flowing tail and more or less of the long silky hair, which is put to various uses, being spun into ropes, or spun and woven; the fine hair of some varieties being also used for textile fabrics of great beauty. The introduction

of the Cashmere or Angora goat, about which there is now so much stir in the country, indicates an interest in animals of long silky fleeces which leads us to commend the Yak to our enterprising importers.—As a beef, dairy, and laboring animal, all we know of the Yak is, that its flesh and milk, (butter, etc.,) are said to be good, as used by the Asiatic mountaineers; and though seldom worked in the yoke it is much used as a pack and saddle beast, being sure of foot and quite a rapid traveler.

There have been a few introduced into this country, and one, we believe, is still living, and in a menagerie.

The Cattle of the Channel Islands.

Wherever domestic animals within a limited district are subjected to similar circumstances, being bred and used for the same purpose, the characteristics and looks of different animals



THE YAK OF THIBET.—(*Bos grunniens*.)

des Plantes). This shows the general characteristics of the species better than we can describe them. The body is deep, the shoulders high, and the height increased by a hump, which gives an undue appearance of lowness to the rump, the head broad, covered with thick hair, the horns being much like those of the common ox. The legs are short, but the long hair makes them look shorter than they really are. The neck, dewlap, and sides, are covered with long



JERSEY BULL, "JUPITER," PROPERTY OF RICHARD M. HOE.

hair of a silky lustre, while a coat of fine hair covers the entire body. The hair of the mane, back, and tail, is peculiar, being finer and more silky. In the Royal Yak the color of the head, body, and legs, is black, while the hair of the mane, back, and tail, is of a brilliant white. The Yak has a tail much resembling that of a horse, and these tails are in great request among the wealthy residents of India and China as fly

gradually become very much alike. In this way all the breeds of cattle and sheep have been established, and it is usually the case that such a breed of animals is peculiarly well adapted to the uses of the district in which it is formed, (better, indeed, than to any other), and that it loses more or less of its distinguishing characters when removed. In the place of its nativity, a breed is therefore prized; and the views taken by intelligent breeders establish a uniformity of taste, in color, size, and points, which after a few generations give rise to differences between the cattle in contiguous valleys, or islands, as in the case of the Channel Islands. To a close observer noticeable peculiarities are usually seen even in the cattle of neighboring parishes, or even farms, if the herds have not been much crossed.

The group of the Channel Islands consists of six, the principal of which are Jersey, Guernsey, and Alderney; Jersey being the largest and Alderney the smallest. This group, which is subject to the British crown, lies in the bay of St. Michael, off the coast of Normandy and Brittany in the North of France, and is famous for butter, cider, perry, and parsnips, and for a race of peculiar cattle distinguished for the richness of their milk.

The original stock from which the different breeds into which this race has become naturally divided sprung, was doubtless from the adjacent main-land, and was, perhaps, also essentially influenced by animals brought from a distance which might easily have been landed from ships touching at the islands. Since the cows of these islands have become so valuable and sought after in foreign countries, the greatest jealousy has sprung up that no taint of foreign blood should be justly imputed to the breed of any farmer; so that now the cattle of each island, particularly of Guernsey and Jersey, have been quite free from any foreign intermixture for many years, and every year their characteristics are better defined.

Dr. Twaddell, in an account of a visit to the islands given before the Philadelphia Agricultural Society not long since, said that there are 3,000 Jersey, and 1,200 Guernsey cows, exported from the islands every year.

The name Alderney, frequently given to this breed, is essentially a misnomer, for it is admitted that the cattle of the island of Alderney are a mixture of Guernseys and Jerseys, and not of so uniform a character as those of either, and hence not entitled to be considered a distinct breed, and certainly not to give the name to the breed which is found so much more uniformly characterized upon the island of Jersey.

We present an engraving of a fine bull belonging to Col. Hoe of Westchester County. It was accurately copied from a photograph, which will account for a little stiffness of position.

Walks and Talks on the Farm.—No. 50.

"What is the best kind of cow for me to keep," asks a suburban friend, "the object being to get good rich milk without special regard to quantity?"

It would seem an easy matter to answer such a question; and, indeed, I replied at once "Alderney." But further conversation led me to the conclusion that the Alderney, instead of being the best, would be one of the worst cows, for my friend to buy. In the first place, he could keep but one cow; and in the second, he wanted milk every day in the year. In such circumstances no other plan can be adopted except to buy a milk cow and keep her as long as she

gives the requisite amount of milk; then sell her and buy another. A grade Devon would perhaps be the best of all cows for such a purpose. She gives rich milk, and with liberal feeding, would steadily improve in condition, and could be sold to the butcher for as much as she cost. I have known a cow of this kind to give milk every day for five years, and then be worth for beef a good deal more than she cost.

The fact is, we may as well give up talking about thorough-bred cattle for ordinary purposes. The real question is, not whether the Short-horn, Devon, or Hereford, affords the best beef at the least cost, but which breed gives us the most valuable "grades" when crossed with common cows. We understand pretty accurately the merits of the different breeds, but little is said in regard to the qualities of their grades. Of course when we know the characteristics of the thorough-breeds, we can form some idea of the merits of their grades, but there are questions in regard to them that need to be more fully discussed. I can easily see how a Short-horn grade from one of our best native milk cows would give more milk than a thorough-bred Short-horn cow.

Mr. Willard, of Herkimer County, was here last week, and we had a long talk about dairy matters and his visit to England. He found, what I have always asserted, that in the mechanical appliances for making cheese we are far ahead of the Cheshire farmers. Our best factory cheese is also better than the Cheshire cheese and brings a higher price. In Cheshire little or no grain is raised. The land, as in the dairy districts of this State, is devoted almost exclusively to grass. But in the Cheddar cheese districts more grain is grown, and the farmers pursue a mixed system of husbandry. The farms afford a much larger aggregate amount of produce. They keep as many cows on a given area, and get a considerable amount of grain besides; and the cheese brings a higher price. I want to see the same system tried in the grain growing districts of this State.

One thing surprised me. It seems that the general system adopted in Herkimer County is, to keep the cows as long as they give a fair quantity of milk—say till they are 12 or 14 years old, and then sell them for "barrelers." Cows that in their prime were worth \$100 a head are kept till they are "used up," and then sold for \$5, \$8, or \$10. Many such cows have been sold the past few months for \$5 a piece. Now it will become an outsider to condemn a practice adopted by intelligent farmers after many years of observation and experience. It is fair to presume that there is, or has been, a good reason for the practice. I can understand how such a system originated. When new milk cows could be bought for \$25 a head, and good beef was worth only 2 cents per pound, live weight, it would not pay a dairyman to keep cows with reference to anything else than the amount of butter and cheese that could be forced out of them. I have known the owner of a saw-mill, when the slabs accumulated to an inconvenient extent, to take out the machinery from the mill and set fire to the whole thing, and then rebuild on the clear space. This was the quickest and cheapest method of getting rid of the slabs. So too, when my farm was cleared, eight acres of the heaviest timbered land was chopped down and set fire to in a single year. It was probably the best thing that could be done with it. At the present time such timber would be worth four hundred dollars an acre. Now what

would be thought of a farmer who was so wedded to old customs as to continue this method?

Choice beef now commands a higher price in the markets of New-York, Boston and Philadelphia than in any other city in the world. Do we fully comprehend the bearing of this fact on our agriculture?

Last week I was in New-York and went to the old Bull's Head Market (now removed up to 100th street). It was the Monday before Christmas, and yet the quality of the cattle was, as a general rule, of the poorest description. It was a soft, rainy day, and one of the salesmen remarked: "They've got us to day; last week we had them." Prices fell half a cent to a cent per pound. And yet I saw one pair of six year old cattle sold for \$500, or 20 cents a pound, "estimated dressed weight." They were large, coarse, grade Short-horns; not by any means of choice quality, but very fat. I have a grade Hereford cow, six years old, that has been giving the richest of milk all summer (though not in large quantity) that would now make far better beef than these steers. She has fine bone, thin skin, handles superbly, and has a great tendency to fatten.

It takes more food to produce a pound of cheese than a pound of beef; and yet the latter commands the higher price. There is danger of glutting the cheese market; there is no present danger of glutting the beef market. We are brought into competition with all other nations in the production of cheese, while we have a monopoly of the best beef market in the world.

Suppose a dairy farmer raises his own cows. They prove to be good milkers, and he keeps them till they are twelve and a half years old, and then sells them for \$10 a piece.

The heifer comes in, say at two and a half years old. Up to this time she has cost, say \$50. And after that her keep, say, costs \$50 a year for ten years; or \$550 in all. She produces, say \$75 a year for ten years, and sells for \$10; or \$760 as the total produce. Profit \$210.

Take the other system. The heifer comes in at two and a half years old, as before, and has cost \$50. You then keep her till she is eight years old; say five and a half years keep at \$50 a year, or \$275, or \$325 in all. She produces \$75 a year for five years, or \$375, and then sells for \$80 to the butcher, or \$455 in all. Profit \$125. Another cow then comes in, costing the same and producing the same.

The profits are \$250 in the one case against \$210 in the other. But this is not all. The old cows do not give as rich milk as the younger ones. And it is worthy of consideration whether the calves of such cows are as strong and healthy, and whether they are not more subject to disease. Milk being the only object, there can be little doubt that the dairymen select heifers from cows that are "deep milkers," and also use males from the same stock. The dairyman uses all his skill to induce a great flow of milk. He does not ask which is the most nutritious food, but which will give the most milk. Health, strength, vigor, constitution; fat, flesh, and bones, are all sacrificed, if need be, for milk. Breeding, feeding, treatment, all aim at milk. Many of our so called native cows have no equals in the world for milk. We have cows that produce 600 pounds of cheese in a year, and a hundred pound calf besides. Such a cow has great digestive power and being fed liberally may herself stand this enormous drain, but it will inevitably tell on the offspring. As "like produces like," the tendency to produce milk is there, but not the strength to stand it. What is

the result? "The sins of the fathers are visited upon the children." The cow lives, but the calves die. This result happens so frequently as to threaten the destruction of the dairy interest of the State. I do not say that this is the only cause of the prevailing epidemic, but I have little doubt that this practice of keeping cows till they are used up; feeding them with special reference to the production of large quantities of milk; and rearing calves from cows whose constitution is undermined, is probably one of the principal causes of this alarming disease. Of course the effect may not show itself at once, and when it is seen it may not be easy to trace it back to its cause. At all events, the practice of keeping cows till there is little left except the hide and bones, is not in accordance with sound economy, and Nature, sooner or later, always punishes those who waste her products.

"What system would you adopt? On our high-priced land we cannot afford to raise grain and hay to fatten cows in the winter."

"What are your farms worth?"

"One hundred and fifty to two hundred dollars an acre."

The more your farms cost, the better will it pay to adopt high farming. In fact, I do not see how any other system can be profitable. If a man pays \$10,000 rent for a store on Broadway, he must do more business than the man who pays only \$500 for a similar store in a country village. So in farming; high-priced land must be worked up to its maximum capacity. You can afford to pay much more for manure that will double the crops on land worth \$150 an acre, than on land worth only \$50.

Mr. Willard says that the farmers in Cheshire, by boning their land every dozen years, are enabled to keep one-third more stock. On cheap land, this might not pay, but on land costing \$150 per acre, (the simple interest on which, in a dozen years, comes to \$126,) it would be highly profitable. And it must be observed that the increase of the grass does not represent the whole benefit. The probabilities are that the grass itself is of far higher quality, and would produce much more cheese.

I did not know it, but it seems that one reason of the superiority of Herkimer County pastures, is their tendency to grow clovers. The more white clover the dairymen can get in their pastures, the more highly they esteem them. I can readily see why this is so. The clovers all contain about twice as much nitrogen as the grasses, and it is equally certain that milch cows require more nitrogen in their food than fattening animals. And it must be quite an object to increase the proportion of clover in their pastures. I think I told you of a remark the Deacon made last summer. On the west side of my house is a poor sandy slope. It is so light that the west winds drive the sand in clouds into, and almost over, the house. At the bottom of the slope was a quagmire. A couple of underdrains running up the slope, remedied this. They tapped several springs, and carry off large quantities of water. The land was very foul, and poorer than poverty. I cultivated it for two years with root crops, for the purpose of killing the weeds. Having no manure, I dressed the land liberally with raw-bone superphosphate and phosphatic guanos. A finer crop of turnips than this land produced, I have rarely seen. I then sowed it with barley, and seeded it down with red-top, Kentucky blue grass, and Timothy. The barley was a light crop, and the grass did not "catch," except on the low land. Last spring, I sowed more grass

seed, but the season was so dry, it did not thrive. But there was an occasional root of white clover, say two or three feet apart. By the middle of summer, it had nearly covered the ground, and I am satisfied that by next year the whole slope will be covered by a thick sward. "Well," said the Deacon, as he rode past, "I would like to know what you have done to that land. It's the first time I've seen white clover there for thirty years." "I have killed the weeds, and put on plenty of phosphates." Now, the Deacon has no faith in artificial manures, though he believes in plaster, ashes, and hen-dung, and spends as much time in gathering, pounding them up, mixing them together, and dropping them on the hills of corn, as would pay for a full equivalent of a good artificial manure, and so it would not do to let the matter remain in this shape. "There seems to be a good deal of white clover everywhere this season," he said, as he touched up old Prince with the whip, and drove off.

There can be no doubt that enriching the land, either by hoeing or by manuring, causes it to grow richer grass. And it would be well for the dairymen, as well as the rest of us, to enquire whether our pastures might not be greatly improved by top-dressing; and that not so much in the yield per acre as in the quality of the grass. We have a clear apprehension of the importance of getting a good bite of grass, but many of us seem to forget that a hundred weight of one grass may be worth for keeping up the flow of milk and the vigor of the cow, as much again as a hundred weight of other grass.

"But you have not told us what system you would adopt."

I have no intention of doing so, except so far as to say that "high farming" would prove a remedy for most of our agricultural troubles. The details must be governed by circumstances. I will tell you what I would *not* do: I would not keep a two hundred acre farm, worth \$30,000, and have on it a good stock, worth \$5,000 more, and then not employ more than a thousand or fifteen hundred dollars capital to work it with. I would not let a stream of water rush uselessly down a side hill, when a little labor would distribute it over acres of parched pasture land, and make it produce threefold more grass than at present—the consumption of which would furnish an extra quantity of manure. I would try hard not to have weeds starve out the nutritious clovers and grasses. I would not exercise years of intelligent care and effort in selecting and breeding cows that are capable of turning large quantities of nutritious food into butter and cheese, and then let them get so poor, by the end of the season, that a high wind would blow them over.

The fact is that these "high priced lands" do not keep half the stock they ought to keep. On Mr. Horsfall's farm of sixty acres, there were kept, when Mr. L. H. Tucker visited it, 20 milch cows, 21 heifers and bullocks, 64 large mutton sheep, 106 lambs, 4 pigs, 2 horses and a pony, or 218 head in all.

Forty-three acres of the land was in grass; 2½ acres wheat; 4½ acres root crops; 3½ acres oats; and 3 acres beans. The secret of his success is in the large quantity of rich manure that he makes and applies as top-dressing to his grass land. He makes this rich manure by feeding his cows and other stock in the most liberal manner. His hay and grass is of the richest quality, and besides this, he feeds oil-cakes and other purchased food. "The whole of my meadow land," he says, (in the *Journal of the Royal Agricultural Society*, Vol. 18, page 181,) "re-

ceives a dressing of manure once a year. * * * In addition to this yearly dressing with excrement, I apply guano at the rate of 2 cwt. to each acre." "But will such a system pay here?" Why not? "Labor and taxes are so high." That is precisely why we must adopt high farming. It requires far less labor, *per ton*, to raise three tons of hay per acre than one ton. Recollect, we are getting high prices.

"Mutton is cheap."

True, but what mutton? Mr. Judd, who has just returned from an extended tour in Europe, remarked to me last week: "Give us such mutton chops as I ate in England and, (to my surprise,) in Russia, and I will insure you 20 cents per pound." In fact, choice South-down mutton now brings 18c., 20c., and 25c. per pound by the carcass in New York, while half-starved, common sheep are slow of sale at 8c., 4c., and 5c. per pound. And, in fact, thousands are being slaughtered in this section, and boiled up for the tallow. The legs are saved for food; the rest, after being pressed, is fed to hogs.

We are making a great mistake, however, in killing the sheep. The prospects for profitable wool growing were never better than at present. I did all I could to stop my friends from going into "gas-train merinos" during the late excitement. I foresaw the result, as did many others. But it is not too late to correct the mistakes that have been made. The American merinos, so called, have some admirable qualities that can be turned to good account. A sheep that has the power of secreting 10, 15, and 20 pounds of yolk in a year, and 5 or 6 pounds of such a highly organized product as fine wool, must possess great vigor, a magnificent constitution, and splendid digestion—qualities too rare and too valuable to be sacrificed. In the hands of such a man as Hammond, animal life is as plastic as the potter's clay, and there is a fine field for the hundreds of young American Bakewells, and Eilmaus, and Webbs, and Hammouds, to enter at the present time, and win fame and fortune.

Broom-corn.

Every one whose memory goes back to the Age of Homespun, recalls broom-making as one of the brightest scenes by the farmer's winter fireside. The chief operator was not uncommonly a negro, who made this his main business during the fall and winter. With his bundle of white oak splints, bodkin, knife, and cord, he went from house to house, manufacturing the annual stock of brooms. Every farmer raised his patch of broom-corn with as much regularity as his corn and potatoes. There were no brooms in the market, and the sole reliance for this indispensable article of housekeeping was the home-grown article. The broom-maker followed the cobbler in his annual round, and stocked the garret or kitchen loft with a goodly pile of brooms. The old-style broom was not the broad, flat article, now in the market, but one larger and more clumsy, invariably round, and bound together with narrow strips of wood.

The handle end was left untrimmed, to be finished off after the handle was inserted. This was a round stick, usually of chestnut or ash, made square, and pointed at one end; it did duty for many generations of brooms. The use of turned handles, and of threads and wires, and the flattening of the brush to give a wider sweep, are modern devices that came later.

But the age of homespun has past, and we have to draw upon memory for the old style of

broom that hung on a nail in the corner of our grandmother's kitchen. The patch of broom-corn is not so common in the farmer's garden, and the wandering broom-makers and cobblers have gone the way of all the earth. The housekeeper draws upon the country or village store, or upon the pedler, for her supplies, or buys her annual stock in the large city markets. Even those very convenient articles for cleanliness about the kitchen hearth, the pressed wings of turkeys and geese, have been driven out by the whisk brooms of the factories. Broom-corn has become a specialty, and is raised on a large scale in some localities, like tobacco, hemp, and hops. As so many housekeepers depend upon the factory-made article, the consumption is very large. This crop, though not so profitable as some others, is yet a very good one for soils that are well adapted to it. The crop has no unusual dangers or enemies, and the prices for the brush are quite uniform and remunerative.

The soil usually selected is a well drained, sandy, or gravelly loam, quick and fertile, such as is found in many of our river bottoms. Reclaimed muck swamps and bottom lands, with a large share of vegetable deposit, are found to make too rank a growth of leaf and stalk. If uplands are selected, they should be well drained and rich in alkaline salts. The crop will grow in any land that will mature Indian corn, but might not prove remunerative. It is particularly important that broom-corn should be grown upon clean land. When the blade first appears, it is very small and hardly to be distinguished from some kinds of grass, and it remains in this feeble condition for two or three weeks. In foul lands, the expense of cleaning and cultivating is very much increased. It is on account of this weakness of the plant in the early stages of its growth that manuring in the hill or drill is particularly desirable, to push it along rapidly and make it show above the weeds. This fertilizer may be horse, hog, or sheep manure, well rotted and made very fine, or any of the concentrated fertilizers that have a fair share of ammonia. If the plants are backward, apply ashes and plaster at the first hoeing, and after as they need. The rows are planted from 25 to 36 inches apart, depending somewhat upon the character of the land and the views of the cultivator. If the land is rich or very well manured, it will bear thicker planting than poor land, or, if the grower desires very fine brush, he will plant thick. The seed is sown either in drills or in hills, about three times thicker than Indian corn. If in hills, plant 2 feet apart and thin out to seven or eight plants in a hill at the second hoeing. If in drills the plants should be thinned out to about five to the foot. The cultivation should be frequent and thorough, going through the rows with the cultivator as often as once a week, until the plants are too high to admit of the use of horse-power. The success of the crop depends very much upon this thorough cultivation, and with improved implements this may all be carried on with horse-power after the first weeding. Suckers will start from many of the plants, especially from the dwarf variety, and these must be removed by hand until the brush begins to show. When the seed is just past the milky state, it is time to bend over the

tops. This is done at any height that is convenient for the operator, but a foot or two from the lower end of the brush is the rule. Two rows are taken at a time, and the tops are bent over toward each other. Sometimes the tops are left at right angles to the main stalks, lapping upon each other, and this is called "tabling." When the brush is cut, it is laid upon this "table" for partial drying. Others bend the tops clear over at a sharp angle. Others, still, cut up the stalks near the root and in this case the brush is subsequently cut off with about four



THE SPINY CLOTHUR.

inches of the stalk, bundled, and laid up to dry under cover. Much of the value of the crop depends upon skill in drying. Some have sheds or barns especially for this purpose, somewhat upon the plan of a tobacco house, with ample facilities for ventilation. All that is wanted is protection from the rain, with a free circulation of air between the layers of brush. Many who have small crops build rail pens, arranging poles upon the interior for spreading the brush. The best brush is dried under cover, and should be of a bright greenish color, elastic, tough, and straight. If the brush has stood too long in the field, it is of a reddish brown, and brittle. The seeds are removed by a hatchel, made for the purpose, by the small cultivators, while the large planters use a horse-power machine. The seed being gathered before it is fully ripe, is apt to mould and ferment, unless spread upon a large floor and frequently stirred. This varies in price from fifty cents to three or four dollars a bushel. It is valuable as a feed for poultry, or it may be ground up with other grains and fed to swine and cattle. It is an important item in the profits of the crop, and should not be wasted.

In raising seed to plant it should have full time to mature upon the stalk, and the growing crop should be kept at a distance from any Chinese sugar cane, or Imphee. Seed should be saved only from the toughest, finest, straightest brush, grown under these favorable circumstances.

There are two varieties in common cultivation, the tall and the dwarf. The latter is decidedly the preferred in the market.

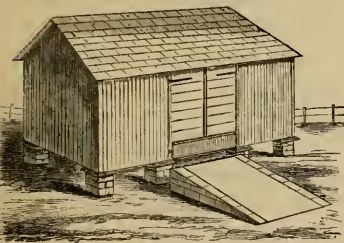
With good land and cultivation, about five or six hundred pounds of brush are grown to the acre. Sometimes a thousand pounds are reached, but this is an exceptional crop. The market price varies from five to ten cents a pound. At the highest price, it will be seen that about fifty dollars an acre can be expected for the brush, and if we put the seed at half as much, it will only make seventy-five dollars as the gross receipts from an acre. The stalks are only valuable for manure. This crop can only be regarded as fairly remunerative, and should not be attempted except where the land is particularly adapted to it. It is quite extensively cultivated in the valleys of the Genesee, the Mohawk, and the Connecticut, and those persons in the West and South who are thinking of trying it on a large scale upon their river bottoms, should visit these localities before entering upon the enterprise. It is estimated by a prominent dealer in the article that about 5,000 tons are raised in the whole country. The Shaker, or dwarf, variety is principally raised in the Mohawk and Connecticut valleys.

A Bad Weed—The Spiny Clothbur.

Last autumn, while riding in the vicinity of Cincinnati, we saw by the roadside a plant of the Spiny Clothbur. Having never before seen this far away from salt water, we were as much surprised as we would have been to see sea-weed in the Ohio River; but the plant has found its way to other parts of the West, as is shown by a specimen since received from a correspondent in Michigan. Believing that every farmer should take an interest in his enemies as well as in his friends, both among plants and animals, we give an illustration which will enable this foreigner now on his westward travels to be recognized at once, and hope that all good cultivators will see that he does not reside long enough with them to be able to get his naturalization papers. Along the sea coast the plant is not very rare, and it seems to affect old fields and waste places. There is some doubt as to the native country of the Spiny Clothbur, Southern Russia and tropical America dividing the honor between them. It is one of those plants that are remarkable for becoming naturalized in widely separated countries. The first recorded appearance of the plant is in 1818, about which time it was found around Savannah and other southern cities; some years later it appeared in Pennsylvania, and in the course of time worked—or rather stole—its way as far north as Massachusetts. It is now on its western travels, and we believe that the localities we have given are further west than have been recorded before. But how does it travel? For the most part, just as other travelers do, by public and private conveyance. Wherever ships discharge their cargoes and ballast, there we find foreign plants, and where-

ever railroads penetrate a country, we have the facilities for the transportation of weeds. Some of these plants seem to follow the white man wherever he goes, a fact which the savage long ago observed and gave to a common weed the expressive name of "White man's foot."

The plant is much branched, 3 or 4 feet high, with rather slender stems. The leaves with the sharp, yellow, 3-parted spines at the base of each, and the oblong bur, are given of the natural size in the engraving. This bur contains two seed-like nuts resulting from two pistillate flowers; these are enclosed in a covering or involucre, which, as the fruit ripens, becomes hard and the hooked prickles become very stiff. The staminate flowers are borne in separate heads upon the same plant. The botanical name of the plant is *Xanthium spinosum*. The generic name is derived from the Greek word for yellow, as it is said that some of the plants yield a yellow dye. As to its specific name, *spinosum*, we might say that it named itself. The common Clothbur, or Cocklebur, is another *Xanthium*, and is well known to every farmer's boy who has had to pick its prickly burs out of the tails of horses or the fleeces of sheep. The burs of the present species show a similar persistence in clinging, but it is a little fairer than the other in presenting its thorns to warn the animals off. Fortunately the plant is an annual, and if attended to when it appears, need not become established. It can readily be identified before the seed has formed, and when once cut down will not spring up from the root.



A Kansas Corn Crib.

We venture to say that the corn crib here represented is the best in the State of Kansas—at any rate, it is a good one, planned and built by an Ottawa Indian, John T. Jones, familiarly known to Kansas people as "Ottawa Jones." The excellent example the "red skin" sets to his "pale face" brethren, will be appreciated by all familiar with the rail-pen cribs almost universal at the West. The corn crib will save grain enough from the rats to pay its cost in a very few years. Mr. J. P. Brown, of Ottawa, who sends us the sketch, describes it as 16 feet wide, 25 feet long; having a drive way through it, approached on either side by an inclined plane, connected with the building by a draw-bridge, shown raised in the engraving, and forming part of the door. The posts are two feet square, protected by zinc caps extending 8 inches on all sides. The sides of the crib are upright slats placed an inch and a half apart.

This arrangement has the advantage over most other plans which we have commended to our readers, of affording abundant floor room for shelling, etc., for the corn must be stored in slatted bins around the sides, or spread upon the floor evenly, one or two feet thick, to be sure of its not being injured by heating.

Rotation of Crops.

In forming plans for the future improvement of the farm, a good rotation is of the first importance. The neglect of this is ruining the virgin soils of the West. Continued wheat cropping has diminished the wheat yield one half or more. States and Counties that once averaged twenty to twenty-five bushels to the acre, do not now average more than ten or twelve. The rotation in the grain districts of Pennsylvania is convenient, simple, and has borne the test of long experience. It keeps up the yield of wheat to twenty-five bushels to the acre, and corn to forty or fifty. It is as follows: 1st year, corn upon a sod, limed in the early fall, and turned over in the spring, or turned over either in the fall or spring, and the lime spread upon the inverted sod; 2d year, a crop of oats, or a summer fallow, with all the manure spread in the fall; 3d year, winter wheat, with six quarts of timothy to the acre, at drilling, and six pounds of clover seed, the following March; 4th year, a crop of clover for hay, and a second crop for seed; 5th year, timothy for one, two, or three years, according to the strength of the land. The aim is to keep up the land to a productiveness of two tons of hay or more to the acre, and if it falls below this, it is an indication that more lime and manure is needed.

A common rotation in Canada is: 1st, wheat; 2nd, clover for two years; 3d, fallow; 4th, wheat; 5th, oats; 6th, peas; 7th, a bastard fallow; 8th, wheat; making three crops of wheat in eight years. But the land runs down under this treatment without manure, and this must come in as a part of the rotation in any improving system, upon ordinary land. And even upon the prairies and bottoms, where they get forty bushels of corn in constant succession, it would pay better to use manure, and get eighty or ninety. In the older States, where grain is raised with less profit, manure is still more important, and is the foundation of all successful husbandry. Manure should accompany every hoed crop, or be used in large quantities, once in a rotation of five years. Hay is a very valuable crop, and with sufficient top-dressing or irrigation, land may be kept constantly in grass. It always needs more manure when it falls short of two tons to the acre. There is a handsome profit in raising this quantity of hay to the acre, but one ton is a very poor business. In any system of rotation for Eastern farmers, potatoes, oats, and hay, should have a place.

The "New Forage Plant"—*Lespedeza striata*.

For some time past the papers published at the South, both agricultural and others, have had accounts of a remarkable "new plant" which had made its appearance spontaneously and multiplied rapidly. It seems to have a wonderful vigor, as it not only occupies waste places, but has taken possession of old fields and crowded out the weeds. Even the Bermuda grass, so difficult to eradicate, disappears before it. Among the names that have been given to it is "Little Wild Clover," but it is not a clover, and it was only when specimens were sent to Prof. Gray at Cambridge, that its proper name became known. Prof. G. determined it to be *Lespedeza striata*, a plant heretofore known only as a native of Japan and China. We have several native species of *Lespedeza*, which have the popular name of Bush Clover, and that would answer very well as a common name for this plant; at least, better than "Japan Pea," by

which name it has been called in some papers. It is really neither a clover nor a pea, though all three belong to the same family. It is supposed by some that this plant was introduced into the Southern States during the war, but a note by Prof. Gray in the *American Naturalist* for



LESPEDEZA STRIATA.

November, states that it was known to Prof. Darby of Georgia, ten years ago; and Mr. G. H. Cartledge says in the *Southern Cultivator* that it was observed by him ten or twelve years ago. That a plant from such an out of the way country as Japan should make its appearance in Georgia is certainly strange, though it is not so unusual, that, when once introduced, it should show great vitality and crowd out other plants; we have numerous instances of this in many other introduced plants. It is supposed that the war had much to do with the general distribution of the plant, and that the passage of cavalry and large droves of bees aided its dissemination. The fact

that in new localities it first makes its appearance along the road sides gives probability to this view. A correspondent, whose name we have unfortunately mislaid, sent us a specimen, from which we have had an engraving made, showing the top of a plant of the natural size and a seed pod magnified. The plant was first described in Thunberg's *Flora of Japan* (1784) as *Hedysarum striatum*, and afterwards Hooker and Arnott in the *Botany of the Voyage of the Beechey*, placed it in the related genus *Lespedeza*. Hooker and Arnott describe it as an annual, as does Mr. Cartledge, above referred to; while Prof. Rains, who gives a chemical account of it in the *Southern Cultivator* for November, speaks of it as a perennial. The plant grows a foot or more high, and bears three-parted leaves which are not very abundant. The flowers are small; one is borne in the axil of each leaf and followed by a small, one-seeded pod. The agricultural value of the *Lespedeza* does not seem to be satisfactorily determined. Mr. Cartledge says: "It is, without doubt, a valuable plant. All kinds of stock and fowls are fond of it and thrive well when and where it is plentiful. Chickens will scratch after the seeds and keep fat all winter where they are abundant. It will grow well in a pine thicket where nothing else will grow." Some say that it is eaten only by cattle. The chemical analysis above referred to shows that it ought to be a nutritious food, but the writer thinks the woolly stems will prove an obstacle to using it as cured fodder, unless it be cooked.

To us it seems that the most important aspect of the plant is the possibility that it may supply the place of clover as a crop to turn under as a fertilizer. Clover has been the great want of Southern agriculture, and if its equivalent shall be found in the *Lespedeza*, it will be a blessing. We hope to hear more of the "new plant."

Cross-Cut Drag-Saws.—30 Years' Experience.

"Thirty years' experience in the use of drag saws!" We conclude our correspondent,—Mr. Linville Ferguson of Fay Co., Ind.,—is one of the real western pioneers, in whose track the mighty forests of the then West reeled and fell, whose ringing axes and rasping saws made the wild music of the wilderness. The drag saw is the pioneer's companion indeed, but it is of even greater value when the forests are gone, and wood worth too much to have the logs cut and "butted" with the axe in preparing them for the saw-mill. Mr. F. writes as follows:

"If you please, I will give my conclusions, after 30 years' experience, with cross-cut saws, as to the best kind and the best mode of keeping them in repair.—The best drag-saw I ever met with, and I have seen several matched sawings at County and State fairs, will cut off a



Fig. 1.—TEETH OF DRAG-SAW.

log, 2 feet in diameter, of green hard wood, in 45 seconds, and saw 75 cords without dressing, it first being put in order. It is six and a half feet long, one eighth of an inch thick, stretched in a frame. Fig. 1, represents the shape of the teeth. There are two side cutters to one clearer. The clearers are dressed square, are very slim, and one-twentieth of an inch shorter than the side cutters. The side cutting teeth are dressed chisel-pointed, the point being uniformly about one-twentieth part of an inch in width.

"Fig. 2, represents the best "toothing" cross-cut saw, as it will be seen that it saves one-half the filing, giving the advantage of long teeth.

The best shaped saw is straight on the back and very rounding on the cutting side. The advantage derived by using a very rounding saw, and giving it a rocking motion in sawing off a log, is the same there is in cutting a board with a hand saw, by sawing on the edge instead of on the broad side. The teeth should not be cut so deep at the ends, as in the middle, as it weakens the blade unnecessarily. Six and a half feet is the best length for general purposes.

"In dressing a saw, put it end ways on a bench, prepared so as to clamp it the proper height to suit the operator while standing.



Fig. 2.—TEETH OF "TOOTHING" SAW.

First take a straight-edge, made of hard wood, two and a half feet long, and a riveting hammer; place the straight-edge on the teeth very lightly; be careful to keep each end the same height above the teeth; then, keeping the general curvature of the saw, batter down the points

that are too long. The clearing teeth should be hammered down as far as they will go. If the teeth are too long, file on the upper side, and pare the tooth over toward the hook side, and so repeat until the desired length is secured. Never dress the hook side only. The "facing up" should be done with a half-round file. The clearing teeth should be about one twenty-fifth of an inch shorter than the side cutters. The teeth should be kept in the same shape that they were at first. It is all false philosophy that a wide sloping tooth will cut fast; the slimmer the tooth is, if the metal will stand, the better. Care should be taken in filing, to keep the wiry edge of metal dressed off, in order that the tooth be not dressed too much.



Fig. 3.

"In setting, place the saw in a vise, if it is to be had; if not, set a piece of timber in the ground firmly; saw a kerf in the upper end, so as to receive the back of the blade in the middle, giving the kerf only sufficient depth to hold the saw. A wedge or two will hold it firmly.

"The guage is made of an inch board, 5 inches long and 4 wide, of the form shown in Fig. 3. It has three screws set in evenly, from the side that goes against the saw blade, and one passes through from the other side at the top. The point of this screw is cut off, and its length regulated. By turning it back or forth the desired amount of set is obtained. Never use a wrench to move a tooth, as it does not do the work well, and by having to move the tooth further than necessary, it is liable to break it. Take an iron wedge, if nothing more suitable can be obtained, dress one corner to suit the shape of the tooth; hold it firmly with one hand against the tooth; be careful to hold it so that the tooth cannot move further than necessary; then strike the tooth with the hammer before spoken of. The metal will stretch on one side and move over easily, and not break if the metal is sound.

"To make the best possible point, the extreme point should be moved over a little too far; then taking the file, hold it flat against the blade and tooth, and at the same time dress lightly and apply the guage. This guage, when properly applied, will give an approximation to correctness; finally, for perfection, range along the teeth with the eye, and correct the imperfections. This, however, will require some practice and experience. Never set more than to give the saw liberty to move without binding. The directions here given apply more particularly to the Tuttle saw than to any other, but will, in the main, apply to any cross-cut saw."

Hatching Fish Eggs.

The experiments in fish breeding are bringing to light some very interesting facts in their natural history. It takes much longer to hatch the eggs of the varieties that breed in cold water, than those that are spawned in rivers during the summer. The eggs of shad put in water of suitable temperature, produce young fish in a few days. The salmon trout eggs require a longer incubation than those of most birds. Salmon require two months or more, under the most favorable circumstances. The New England Fish Commissioners, we see by the papers, are having great luck in the hatching line, at the Charlestown Springs, in New Hampshire, where they deposited 40,000 salmon eggs in October. They hatched on the 11th of December, just 62 days from the time they were taken from the parent fish. The eggs of the salmon trout, at these springs, were 35 days in hatching,

which is said to be the shortest time on record in this country. The salmon eggs were taken from fish in the Miramichi, one of the best salmon rivers in New Brunswick. Our Eastern readers will be very glad to see this evidence of substantial progress in the work of re-stocking New England rivers with fish. It will be recollected that a very large stock of shad eggs was hatched, and turned into the Connecticut, at Hadley Falls, last spring. These, according to the programme, ought to make their appearance in that river the coming season. The annual catch of shad in the Connecticut has dwindled to about 600,000. If 50,000,000 were turned into the river, as reported, shad ought to be very plenty and cheap next spring. For the salmon we shall have to wait longer. They are two years or more in coming to maturity, and it is proposed, we believe, by the Fish Commissioners, not to allow any to be taken from the Connecticut, except for the purpose of propagation, until 1871.

In England, the work of re-stocking the rivers with salmon is going on successfully, and we see frequent discussion in our exchanges on topics connected with this subject. The best method of constructing fish stairs is still under discussion. Nothing better has been elicited than the plan illustrated in our last volume. It is well settled that the inclination in these stairs should not be greater than one foot in seven. These re-stocked rivers are affecting the price of fish and salmon can be had in the London market for less than half what it costs in our cities. Riparian owners are in good spirits, and the papers abound in advertisements of spring salmon fishing to let. We hope to see salmon plenty very soon in this country.

Cheese Factories vs. Butter Supply.

The introduction of cheese factories into the dairy regions is having a very perceptible effect upon the butter market. A much better article of cheese is, no doubt, made than under the old system. It greatly relieves the farmer's wife, and for a time it was more profitable for the farmer. But we apprehend that the new system has been pressed with so much vigor that it is endangering our butter supply. Cheese is now quite too cheap for the farmer's interests, and butter quite too dear for the consumers. It takes from 9 to 10 lbs. of milk, according to the statistics of the Dairyman's Association, to make one pound of cheese, and about twice as much to make a pound of butter. Allowing that the labor of making each is about the same, the price of butter ought to be about twice the price of cheese, and this used to be about the relative value of the two articles. But now these proportions are changed, and cheese is worth only one-third as much as butter. Our quotations for these articles December 16, 1867, are: State butter 30 to 48 cents, cheese, 8 to 16½ cents. A year ago State butter was 33 to 45, and cheese, 14 to 19 cents. Cheese has fallen in price until it is about the cheapest article of animal food in the market. Butter was quite too dear a year ago, and grew dearer until March, when it was quoted at 40 to 60 cents. It is higher now than it was a year ago, and likely to go still higher. These quotations show the tendency of the markets, and, of course, the tendency of the dairy districts. It may be true that we do not make too much cheese. It is quite evident we do not make butter enough. We know of nothing else to affect the relative supply of these articles except the cheese factories, which are now numbered by hundreds, and

absorb the milk of the best farmers in the dairy regions. The supply of milk for the cities and large towns draws alike upon the cheese and butter supply and would not disturb the balance.

What is to be done in this state of the market, to restore the balance and give us butter at reasonable prices? We believe a few of these factories make both butter and cheese, and this, perhaps, will become necessary for all, to get the highest market price for the products of milk. These are butter, cheese, and whey, the last of which is fed to pigs. Under the old system, all farmers who had a convenient market for butter preferred to make that from a part of the milk, and convert the balance into cheese. The skimmed cheese was a second-rate article, but wholesome and nutritious, and entered quite largely into the family supplies. It found a market at the country store and utilized the milk better than exclusive butter making would have done. The exclusive cheese makers were those who had no ready market for butter. The cheese would keep better, and could be disposed of in large or small quantities as suited the convenience of the dairyman. We see no insuperable objection to the making of both butter and cheese by the factory system. Of course, first-rate cheese could not be made at the same time that the butter was made. But we might have first-rate butter with a second-rate article of cheese all through the season, or the season might be divided between them, giving the cooler months to butter and mid-summer to cheese. Some change is called for, and we must have it or go back to the home manufacture. If farmers find they can get 45 cents a pound for butter at their doors and only 15 for cheese at the factory, they will prefer to take care of their milk at home. The factory system has some drawbacks besides low prices. It strips the farm of fertilizers. The skimmed milk fed to pigs with other feed made the best of pork, and the swine made a yard of the best manure. Wherever it went it told a much better story than stable manure, and its effects were visible for many years upon the hay crop. Any system in farming is much to be deprecated that prevents the manufacture of home made fertilizers.

Poultry Manure—How to Save and Use it.

Poultry manure, one of the most valuable fertilizers made upon the farm, is too often allowed to go to waste. The hens and turkeys roost upon trees, under the shed, in the wagon-house, or wherever it happens. To save the manure, these birds must be taught to roost in one place. Turkeys readily take to elevated poles near the house or barn, and these should always be provided for them. Sweep up their droppings every few days, and put in a box or barrel, and keep dry. Hens will roost under cover, and a hen-house should always be one of the farm buildings. The floor, if not of boards in a loft, should be such that it can be cleaned easily and frequently. It is well to keep plaster or dried peat under the fowls. Put the sweepings in old barrels as fast as they accumulate. In a dry state they will keep a long time without much loss. It is customary to mix these droppings with wood ashes, without much attention to definite proportions, at the time of planting, and drop them in the hill for corn and potatoes. If care is taken to keep the seed from contact with the manure, they produce very satisfactory results. But this is not the best way of using it. Two or three weeks before planting, mix the contents of the barrels with about three times

their bulk of moist loam or peat under cover. When the mass is well heated, shovel it over, and mix with it as much more loam or peat, and let it lie until wanted. This may be worked into beds prepared for garden seeds, or dropped, a handful to the hill, for field crops, and will always tell a good story at harvest time.

AN ABOVE GROUND CELLAR.—A correspondent, R. H., at Oshkosh, Wis., writes as follows: "I built a cellar above ground in 1866, but did not protect it sufficiently; the sawdust being wet got frozen, and the frost penetrated to the cellar. This year I banked it up with litter, and put a ventilating pipe through the roof, and it works well so far. The temperature is about even, no matter what the weather may be. It has double floors, packed with sawdust; boards nailed to the studdings inside and out, making a 4-inch dead air chamber; then 10 inches of sawdust; the ceiling is of matched flooring with 8 inches of sawdust above it. I will, in the spring, lath and plaster it, and lay a brick floor. It is 'as handy as a pocket in the shirt.'"

Origin of the Domestic Turkey.

Many suppose, from its name, that the Turkey originated in the East. Not only does the English name give support to this belief, but the French name, *dindon*, a contraction of *Oiseau d'Inde*, (bird of India), shows that the same is held in Europe. Professor S. T. Baird, of the Smithsonian Institution, than whom there can be no better authority, has investigated the subject, and finds that we have two distinct species of turkey in North America: "One confined to the more Eastern and Southern States, the other to the southern Rocky Mountains and adjacent parts of Texas, New Mexico, Colorado, and Arizona; that the latter extends along eastern Mexico, as far south, at least, as Orizaba, and that it is from this Mexican species, and not that from eastern North America that this domestic turkey is derived." One of the points of difference between the two, and the one believed to be constant, is in the color of the tips of the tail-feathers and of the feathers overlying the base of the tail. These are creamy, or yellowish white, in the Mexican, and typical barn-yard birds; while, in the wild turkey of eastern North America, the same parts are of a chestnut brown color. The domestic turkey was introduced into England, in 1541, and some years later, became sufficiently abundant to afford the farmer his Christmas dinner. When the Spaniards conquered Mexico, the turkey was found in a domesticated state, and it probably had been reared as a tame bird for several centuries to that time.

Care of Pigs in Winter.

It is bad for the swine that the city societies to prevent cruelty to animals do not extend their offices into the country. We wonder how store pigs survive the winter treatment they often receive. They are fed at irregular intervals and with unequal supplies in quantity and quality. They have no suitable shelter, and are often confined in muddy pens without any opportunity to keep themselves dry and clean. The pig is a luxurious liver, if you give him a chance, and will keep himself clean and comfortable. No animal will pay better for warm quarters and a plenty of straw. This can usually be had in any quantity and at small cost about the farmer's premises. The sty should have its full share, and as often as it gets worked up fine it should

be thrown out, and be replaced. Then it is exceedingly profitable that the feeding trough be kept under cover. Swine do not enjoy eating in the snow and rain more than other animals. Give them a chance to follow their instincts, and then see just how much they love snow banks and rain storms. Then the feeding should not be simply the refuse of the family, but substantial food at regular intervals, and in quantities adapted to their weight. Store pigs want to be kept in good thriving condition until they are put up for fattening. Money is sunk in trying to make pork out of stunted pigs.

More Cattle Wanted.

With the price of beef at 18 cents by the carcass, and Porter-house steak at 35 cents, it is quite evident that meat eaters in our cities want more cattle, and we think the farmers, both East and West, North and South, want them quite as much. Pork is the only cheap meat in the market, and that is rather owing to a short crop of corn and potatoes than to any surplus stock of swine in the country. The great corn growing States of the West have been visited by a prolonged drought, diminishing that crop from twenty to forty per cent. Farmers having large stocks of hogs are not able to winter them, and are pressing them upon the market in a half fattened condition. This temporarily depresses the price of pork, but nothing occurs to make cheap beef steaks. The war has closed, and many things have fallen to quite reasonable prices. Cotton and wool are depressed, and clothing of these materials is receding toward ante-war prices. The merchant with a large stock of these goods on hand trembles in his shoes with anxiety to be rid of them. He is exceedingly accommodating both as to price and credit. But the butcher wears his white apron as stiffly as ever, and treats one as coolly as the season. There is only so much stock in the market and nobody can undersell him. The cattle trade is no doubt, very well regulated, and we hear of combination and speculation to regulate prices. This trade is so vast in bulk, and draws its supplies from so wide a territory, that it is hardly in the power of any man or any combination to keep up prices unusually for years as they have been since the war. The men who own cheap lands raise the cattle and sell to the men who graze and fatten them on better lands. These graziers, coming from all parts of the West, sell to the drovers and forwarding merchants in the large Western cities. More of this business is done at the Chicago stock-yards than at any other one point. Thousands of cattle and millions of money change hands in a day. It is an open market business, and the price is regulated by demand and supply as in most other kinds of business. The shortest and best way to reduce the price of beef is to raise more cattle, and this, we believe, will be quite as profitable for the producer as for the consumer.

A mixed husbandry is, unquestionably, the best for the land and its owner in the long run. The raising of cotton and tobacco in the South leaves old fields and deserted mansions everywhere. The soil is recuperated only by expensive manuring or by a long rest in forest. Continual cropping, without returning any thing to the soil, will make any region desolate. The constant wheat and corn growing upon the new lands of the West is steadily reducing their fertility, except on the river bottoms, where the annual overflow restores what is taken away.



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A PAIR OF CASHMERE OR ANGORA GOATS.—*Drawn and Engraved for the American Agriculturist.*

In many of these States the average yield of wheat is already reduced one half, and will sink still lower without a change of policy. We want to sell from all our farms, East and West, more animal products and less vegetable. At the present prices, and with good facilities, it will pay much better to sell beef, mutton, butter, and cheese, rather than hay and grain. As a rule we want to consume the great bulk of the vegetable crops upon the farm for the sake of improving the soil. If there is a good system of saving manures, the farmer can keep his hay and grain at home. He can raise fine stock to sell, horses, working cattle, sheep, hives, butter and cheese, for these and other animal products imply an increase in the stock of fertilizers and better field crops in the future. Some regions, favorably situated for liming the land and getting cheap manures, can afford to sell wheat, but these are exceptional cases. Selling grain, as a rule, is only selling one's farm by installments. The land is all the while growing poorer, and unless there are adventurous circumstances to give it value, its market price is diminishing. Land that will produce thirty-five bushels of wheat to the acre is worth probably a hundred dollars an acre or more. Land that yields but ten would be dear at a quarter the price. Many a grain selling farmer wakes up at last to find that his farm has slid away from beneath his feet. Give us, then, more cattle, and make more fertilizers. Farmers will have to wait a little longer for the dividends, but they will run no risk of using up their capital and destroying their business.

Cashmere or Angora Goats.

The Cashmere Goat is a variety of the common goat, which, like the sheep, and, in fact, all our domestic animals, exists in an almost infinite number of varieties. This, with other closely allied breeds, has been raised from time immemorial, chiefly for its beautiful fleeces. The hair being glossy and fine, it is used in weaving many delicate and beautiful fabrics, and in other ways. Importations of goats from Asia Minor have been made from time to time, with a view of testing their hardiness and value in this country. Their endurance of heat, cold, dry pastures, etc., and if the fleece would remain of the same length and fineness, were important questions to be solved, and these, we think, have received very satisfactory solutions. No doubt, the animal is very hardy, and the fleece remains fine and excellent. These Cashmere Goats feed upon the same food that other goats eat, almost all sorts of weeds included. They are also, be it remembered, equally destructive to trees, and valuable plants, and shrubbery, and will not do well if closely confined. They must have range.

The above picture is made up from sketches, taken by our artist upon the fair grounds, and from a photograph. It does not represent the ideal goat, but the animal as he is. The picture would fill the breeder's eye much better if the back were straighter, and the tail set up upon a level with the top of it, but we are content with the accuracy of the photograph in this respect.

A gentleman largely interested in this stock estimates the number of full blooded, or nearly

full blooded, Cashmere Goats in this country at present at about 10,000. This is, we think, entirely within bounds. Besides this number, there are grades, (half, three quarter, and seven eighth bloods,) almost without number, many of them having very fine fleeces, scattered all about. Extravagant ideas have been entertained in regard to the value of the fleece. It has been thought to be worth \$3 to \$6 per pound, and as nobody was found to give this, the fleeces have been stored, and most likely become food for moths. There never has been enough of this article in market to fix a price. There are a few small factories where it is spun and woven, and the proprietors of these trusts to chance lots they can buy at low prices. A fair price is probably \$1.50 per pound, taking the fleeces as they run.

We have little doubt that, with the revival of business, there will be a market for this wool, and that new and interesting manufactures will spring up. As it is, however, there is no demand, and hence no sale for it. The goats, on the contrary, are in great demand; 150 recently imported by Mr. Israel Diehl for Mr. C. S. Brown, of this city, are held at \$300 a pair, and we hear of both higher and lower prices.

The length of the wool of full-blooded bucks varies with the age, but at three years of age, it often reaches the length of 10 or 12 inches. The fleece of the ewes is much finer and more glossy, as a rule, and the finer and closer the fleece, the less length has the staple. The waves in the locks, which are obvious in the engraving, and give to it its great beauty and brilliancy, are three quarters of an inch to one inch apart.



MAURANDIA BARCLAYANA.

Two Useful Climbers.

Last summer it became necessary to provide some kind of a screen for two long windows which came down to a veranda. Rapidly growing plants were desirable, as well as those having beauty of leaf and foliage. Small galvanized wire was run from one pillar of the veranda to another, to form a support, and several plants of *Maurandia* and *Lophospermum* were set out. The wires were soon covered with a screen of foliage sufficiently dense for the purpose, and a constant show of flowers was kept up until hard frosts destroyed the vines. We were so much pleased with the result that we had drawings of the flowers made last summer, and present them above. The *Maurandia* is the more delicate of the two, and has very pretty leaves of a pleasing light green and of a somewhat triangular shape. The commonest species is *Maurandia Barclayana*, a native of Mexico, and presents several varieties, which range in color from white and lilac to purple.

Lophospermum (*L. erubescens*) is a much more robust grower, with larger stems, leaves, and flowers. Both the stem and leaves are clothed with an abundance of fine sticky hairs, which give the plant a pleasing velvety appearance. Both this and the *Maurandia* climb by twisting their leaf stalks around the wire, or other support, which they clasp with a remarkable degree of firmness. The calyx is conspicuous both before the flowers open and after they have fallen. The shape of the flowers is given in the engraving; they are downy and of a pleasing rose color. The name *Lophospermum* means crested seed, while *Maurandia* is given in honor of a professor of botany named Maurandy; neither has any common name. Both of these climbers may be readily raised

from seed, but unless they are started under glass early in the spring they will be rather late in coming into flower. As they propagate readily by cuttings, they are kept by florists, and it is much better to obtain established plants. In the case above referred to the plants were set out in the border, but they may be grown to decorate balconies, taking care to give them plenty of pot room, or in window boxes. Several other climbers are useful for covering screens and balconies, but the above have a delicate and refined appearance that is particularly pleasing. Some of the newer *Tropaeolums* or *Nasturtians* are brilliant and showy, and are easily raised from seeds, though plants raised from cuttings may be had at the



LOPHOSPERMUM ERUBESCENS.

florists. The beautiful Canary-bird climber, also a *Tropaeolum*, so beautiful in foliage and curious in flower, and so easily grown, is a plant that cannot be too strongly commended.

Cherries—Culture and Varieties.

BY F. R. ELLIOTT, CLEVELAND, OHIO.

[Mr. Elliott has given particular attention to the cherry, and has long been regarded as our best authority on the subject. In view of the general neglect into which this fruit has of late years fallen, we requested Mr. E. to prepare an article for the Horticultural Annual. The manuscript came too late to insure its insertion in the Annual, and thinking it too valuable to go unpublished, we present it here.—EDITORS.]

From the large number of varieties of cherries that rank as best, it is a task difficult of performance to select a dozen that shall combine all the good qualities and be void of the bad. Nevertheless, having given the cherry my careful attention for many years, I will venture to make a selection, which I feel can be planted and the growth and fruit prove perfectly satisfactory, and although it may not combine, or rather embrace, all the good, I feel assured it will have less of the bad than any other list of the same number of sorts that can be made. Prefatory to the description of my list, let me say the cherry tree will not bear "wet feet,"—in other words, the position where it stands must be well drained, so that at no time will the water remain stagnant in the soil about the roots. Gravelly and sandy soils require little or no artificial drainage, and the cherry seems especially at home when planted in gravelly loam; but let no one, because his land is clay, be deterred from planting the cherry, for I have

found it repeatedly doing equally well in a clay loam, when due attention has been paid to surface drainage. In the rich prairie soils, surface drainage is often quite as requisite as in soils of a heavier and more clayey nature. The finely comminuted soil of the prairie seems to hold water in its pores, even when well underdrained, to such an extent as to create disease in the roots of all soft-rooted trees, producing an unhealthy, although perhaps rapid, growth, that results in death from climatic influence, either of summer or winter. In gravelly soils the growth of the cherry is quite moderate, and in strong clay soils, with good surface drainage, the growth is about the same; it completely ripens its wood and root and withstands extremes of temperature as well as the apple.

In procuring trees for planting, my advice is to get those only one year old from the bud, and see to it that they form their branches for the permanent head at not more than two feet from the ground. This low form will make them more capable of withstanding severe winds, and the foliage will shade the bodies from the effects of hot suns in summer. With these few remarks I will commence my enumeration and condensed description of my twelve sorts, taking the *sweet* cherries first, and as nearly as possible in their order of ripening.

EARLY PURPLE GUIGNE.—The trees of this variety are poor growers in the nursery, and to make good orchard trees they should always be headed back while young. As orchard trees they are among the most hardy of all this class, producing abundantly, when they once acquire mature age—say ten or twelve years. A fruit of medium size, purplish-black, and of sweet, rich flesh. As a market variety, its earliness makes it one of the most valuable.

ROCKFORD.—The tree of this variety is very

upright and handsome in growth, making a compact and elegant form, and producing abundantly a fruit of the largest size and very best quality, making it of the greatest value either for market or private use. The color of the fruit is clear bright red, shaded and mottled on amber yellow; juicy, sweet, and rich.

COE'S TRANSPARENT.—This variety makes a tree of only medium size, rather spreading in form, of moderately rapid growth, resulting in hardiness. It comes early to maturity, and produces abundantly a medium-sized fruit of a light amber-yellow color, mottled over with a bright clear red, very beautiful; the flesh is juicy, sweet, exceedingly rich and delicate, making it especially valuable for the table.

GOVERNOR WOOD.—This variety has, perhaps, had as wide-spread and as good a reputation as any cherry in the list of varieties, and when the tree is not overladen with fruit, it deserves all that has been said. It has, however, the fault some seasons of bearing more fruit than it can mature perfectly, except it be supplied with manure, as soapsuds, etc., while the fruit is growing. For a market variety it, like Coe's Transparent, is not fitted, as it is too tender for carriage any long distance; but for private gardens it cannot well be dispensed with, on account of its great delicacy and richness. Its fruit is of large size, light yellow, mottled or marbled over with carmine-red; flesh, half tender, juicy, sweet.

PONTIAC.—Among all the black cherries this, taken all in all, has no superior. The tree is a good grower, hardy, productive, and the fruit large, firm, rich, juicy, and sweet. In real richness of flavor it is not, perhaps, equal to Black Hawk, but the tree is so much superior in growth and productiveness as to make it much the more desirable. Superior as a market sort.

RED JACKET.—Had we not this variety we should put Downer's Late in its place, but when Red Jacket can be obtained, its great superiority in size and quality of fruit, coming at the same period, renders it more desirable, whether for market or table use. The trees are fine growers, becoming very large, spreading, upright, very productive of a large-sized fruit, which is amber-yellow, overspread with pale red; flesh half tender, juicy, and good.

Having thus named and remarked upon six of what are termed sweet cherries, I now come to a class that may be grown almost everywhere, in all soils and climates where the apple will succeed. These are generally classed as *sour* cherries, although, with one or two exceptions, they are not sour, but just pleasantly acid. The perfect hardiness of the trees makes them the most desirable, if but six varieties are to be grown. In naming and describing them I will take them more in the order of their value, in my opinion, than of their time of ripening.

LOUIS PHILIPPE.—This is a variety from France, and I think I was among the first to import it. The tree is upright, spreading in habit, growing to a large tree as it acquires age, open and regular in form, a vigorous, good grower, very productive of a large, roundish, dark red fruit, which has a tender, juicy flesh, and is of a mild acid. Valuable either for the table, for market, or canning.

EARLY RICHMOND.—Although some persons consider this identical with the Early May, I do not; I think the tree more drooping in habit. It is certainly a valuable sort, becoming fit to gather early for cooking purposes, but not really ripening until quite late. The flesh is reddish,

and the stone adheres strongly to the stem.

ARCHDUKE.—This, perhaps, should come next to Louis Philippe, and I place it third in the list only because of the cooking qualities of the Early Richmond. As a variety for table purposes this is superior, but for market the last named would be preferable. This is the best among the Duke varieties. Tree, very erect and upright in habit, quite hardy; an abundant bearer, ripening early in July a large, dark, shining red fruit, with light red flesh, which adheres slightly to the stone, tender, sub-acid, and rich.

REINE HORTENSE.—This is also a Duke in habit of tree, not as upright as the Archduke; hardly, a moderate, regular bearer of large, roundish, compressed fruit; color of a lively red, marbled on amber-yellow; flesh, a pinkish-yellow, of a sprightly mild acid; ripens quite late in July.

BELLE MAGNIFIQUE.—This again has much of the habit in tree of the Dukes, and while young the trees are poor bearers and not more than moderately prolific. As they grow older, however, their productive habit is increased, and fruit may be gathered from them for many weeks in succession. The fruit is large, yellow, mostly covered with red, and with a yellowish-red, tender, mild acid flesh.

EARLY MAY.—This variety, now generally cultivated in Illinois and other Western States, where many other sorts of more excellence have failed, I am disposed to regard as identical with Donna Maria of the French. It is very prolific of fruit, quite hardy in tree, more upright in growth than Early Richmond, or rather with not the same drooping, slender spray. Fruit, medium size, dark red, tender, juicy, rich, acid; good for cooking and market.

SEEDLINGS.—During the past season I examined the fruit of quite a number of seedlings grown by Mr. Charles Pease, near Cleveland, and among them selected the two described herewith as giving promise of value. Mr. Pease has designated them by letters of the alphabet, but will not attempt to propagate until another season of fruiting has passed, when, if they continue as good as this season, they will be named.

PEASE'S A.—Size, medium; yellow, mottled over with red; surface, smooth, even, regular, heart-shaped; fruit borne usually a single cherry in a place, rarely in pairs; stem, slender, set in a regular, even, round cavity of moderate depth; flesh, yellow, half tender, juicy, rich, and sweet; pit, small; leaf, long, acute, pointed, with sharp, irregular serratures; petiole, with two globose glands. Tree of growth like a Mazzard, large and strong. Ripe, July 15, '67.

PEASE'S B.—Fruit, medium, long, compressed, heart-shaped, firm as any Bigarreau; dark rich red on yellow ground, a little marbled and dotted; stem, slender, set in a deep, regular cavity; flesh, yellow, firm, hard, juicy, and rich; pit, small. A very valuable, late, market sort, neither this nor the preceding having rotted. Ripe, July 16, 1867. Leaf, with reddish petioles and two globose glands, broad oval-obovate, pointed, with sharp serratures. Fruit, singly and in pairs. A strong, vigorous, upright grower.

THE MINER PLUM.—Some time ago we stated that this was an improved wild plum, an opinion founded upon specimens of the fruit and leaves kindly sent by friends at the West. Several, some of them interested in its sale, and some not, write that this is a mistake, and that the Miner is a seedling of the European plum. As the two are so different, we cannot believe

this without direct and positive testimony. A letter from "W. W." Grant Co., Wis., says: "I have raised the Miner plum for five or six years; I got it from Mr. Miner, in Grant Co., Wis., who bought his trees of a man in Illinois, who did not have any name for them, so they were called the Miner plum. The true name is Chickasaw plum. A Mr. Isabell, of Joe Davis Co., Ill., has raised the same plum for more than twenty years. It ripens in October, is of a red color, is fleshy or hard for a wild plum, and resists the curculio. I consider it desirable on account of the lateness of its ripening, but I have wild plums that I think just as good."

A Chestnut Grafted upon an Oak.

The Revue Horticole for Dec. 16th gives an account of an instance of grafting of a chestnut upon an oak that would seem incredible were it not so well authenticated. The seeds of the European White Oak, (*Quercus pedunculata*) were sown in place, and when the young oaks were four years old two of them were cut off at about 15 inches from the ground, and grafted with chestnut by the ordinary cleft method, and three others were budded the same year with chestnut. The budded ones failed, but the grafted ones succeeded; one of these was broken off by the winds, but the other grew, and now stands in the botanical garden of Dijon, being over 30 years old. The chestnut at first outgrew the stock very rapidly, and made an enlargement at the point of union; this tendency was in good part overcome by making longitudinal incisions in the enlargement and the stock. The stock each year gives proof of its identity by throwing up a number of oak sprouts. The fruit does not perfect itself, though it sets abundantly; this is attributed to the use of a graft from an unproductive tree, rather than to any unfavorable influence of the stock. A detailed account of this very remarkable instance of grafting is published by J. B. Weber, head gardener to the botanical garden of Dijon.

The Grape Vine—How it Grows and What to Do with it.—1st Article.

From time to time there have been given in these pages, articles upon different methods of pruning and training the vine. In view of the increasing interest in grape culture, on both the large and small scale, we believe we shall do our readers good service, and we know that we shall meet the expressed wishes of many of them, if we present the different systems of training in a series of connected articles. We do not do this with a view of superseding the many excellent treatises that there are upon the vine, but with the hope to meet the wants of the great number who do not care to make a special study of the subject, and who look to the *Agriculturist* to supply all needed information upon this, as upon all other, rural matters. It is easy enough to lay down rules for pruning, and to make figures to illustrate just where to cut; if grape vines always grew just alike, and were turned out to pattern, there would be no difficulty. But the trouble is that the vine is a living thing; it may be weak, or vigorous, it may grow like the picture in the book, or it may forget to make buds just where the engraving shows it ought to have them, and then the routine operator is at fault. A successful grape grower once told us that his advice to a novice was to "buy a work on grape culture, and then go exactly opposite to its teachings."

While we cannot agree with this, we accept it in so far as it is a protest against working by a set rule and an injunction to use judgment in the treatment of the vine. We should think him a very poor surgeon who should always amputate an arm or leg in the same place. As a knowledge of anatomy is the basis of all successful surgery, so an understanding

of the greatest importance, and we give (fig. 1) Dr. Mohr's figure of it as it appears in summer. The node is the place at which the young shoot breaks with great ease when green, but as it ripens a stronger union is formed between the parts, and the stem no longer breaks readily at that place. From the node springs a leaf, which is united to it by a joint, and from which it spontaneously separates when ripe. At the place where the leaf and stem join, and upon the upper side of the leaf stalk, are two buds. One of these buds grows the same season it is formed; the other (unless in cases of accident) remains dormant until the following season. On the side of the stem opposite to the leaf is a tendril, (or cluster of grapes, instead) which does not (like the leaf) drop off spontaneously. These parts alternate upon the stem. In the figure the leaf is on the left hand, and the tendril, (shown here with grapes), on the right; on the node above, the leaf will be upon the right and the tendril on the left, and so on throughout the

whole length of the branch. Here there are all the parts (save the root) that are to be taken into account,—the branch, (or stem), the node, the leaf, the bud, and the tendril. The tendril is to be regarded as a barren cluster, for we always find the cluster occupying the place of the tendril, and not rarely one that is part tendril and part cluster, bearing grapes. The vine, as long as it continues to grow, keeps on repeating these parts, as seen in figure 2, and a full study of these will prepare the novice for the next steps—the appearance of the branch in autumn and the growth the following spring.

Raising Box from Cuttings.

The advice has usually been given to set none but rooted plants in making a box edging, for the reason that we have seen such unsightly failures from cuttings made and set in the usual way. Our friend, "Phil. Woodley, Esq.," of N. C., sends us his plan, which we give below. His success may be due to his manner of making and setting the cuttings, though his more genial climate may have something to do with it. Box is still the favorite edging where it will stand the winter, though we should not advise allowing plants in an edging to grow to the size that "Esq. Woodley" indicates.

"The first step is to lay off the yard in some plain, but pleasing manner. After having thus laid off the walks, (which may be done with old shingles, pieces of laths, or anything of the kind, moving them until you have the line exactly as desired) then prepare them for a suitable edging. Nothing answers this purpose, we think, half as well as our common dwarf box. It may be raised to any extent in the following way: Trench your line six or eight inches deep—twelve is better—and four or five inches wide; then fill up with rich, light compost, composed of wood mould, a small quantity of ashes, and rakings from any rich spot about the yard, and pack the same hard to its very top. The feet are the best packer that can be used. All is now ready for the box. Cuttings can be procured from any large shrub

of the kind within reach, making them about six inches long, and leaving only about one inch of leaves on the whole piece, and that at the very top. Now make a *dibble* of any stick or piece of wood convenient, but round at the top, to secure the palm of the hand from injury, and you are ready to commence the edging. Plant the cuttings as you go—say twelve inches apart—first making the holes with the dibble, and then pressing the dirt firmly around each cutting, from bottom to top, and leaving but the inch of leaves on the top above the surface. I should have said that, after laying off the line for the edging with old shingles or laths, (which may be put as thickly as desired), and the course of the future border is fully determined on, the most of the sticks may be taken up for convenience in trenching, the few remaining only determining the general direction, and before making the holes for planting the cuttings, a slight mark ought to be made on the packed compost, corresponding exactly to the line before marked by the sticks. This will insure regularity, and the line should be marked and re-marked until it is exactly as desired, for no future trimming can supply the deficiency.

This is my plan of making an edging, and so well has it answered that out of about 2,000 cuttings set in my yard, I lost *twelve*. They have had no attention save keeping them clear of weeds, and an occasional trimming. They have grown so handsomely under this treatment that it is now necessary to take up every other one, that those remaining may have ample room to "spread" themselves, thus giving me another supply for my own use and that of my friends."

PLANT LICE AGAIN.—We gave last month Mr. Rivers' preparation to destroy plant lice, or aphides, and we now give another, in order to keep our readers informed of everything that offers a prospect of relief from these pests. As soon as the young shoots push on the fruit trees, they are, in many localities, covered with these minute, but multitudinous, insects, each busily engaged in sucking the juices from the tender wood and checking its proper development. A correspondent in the London Journal of Horticulture gives the following: 1 ounce of aloes, 2 ounces of soft soap, and 1 ounce of sulphur, in a gallon of water. The preparation is said to be efficient, and if the common Cape aloes is used, it can be made sufficiently cheaply to allow it to be freely used. Dwarf trees in the garden are attended to without much difficulty, but for larger trees the task becomes one of considerable magnitude. Still, with Page's Sprinkler, or some similar implement, all parts of a moderate sized tree can be reached. The insects multiply rapidly, and are most successfully attacked when they first make their appearance. The same writer says that this preparation is destructive to thrips. If it will keep off our thrips, so injurious to the grape vine, it will be valuable.

THE PEAR SCALE.—The (English) Journal of Horticulture has recently given a remedy for the pear scale, which we give as we find it. It is simply to paint over the affected trees with boiled linseed oil, in early spring, just before the buds expand, and consequently just before the scale insect begins to multiply. Where the scale is very bad the trees may as well die of the remedy as of the disease.—Now, mind that we do not endorse or recommend this treatment, but if any one has a scaly pear tree, he can try anything that offers a prospect of cure.



Fig. 1.—THE NODE.

of its structure is the foundation of all proper treatment of the vine. The parts of the vine and its manner of growth being once understood, all systems of pruning and training become plain, and difficulties that present themselves in all of them, are readily surmounted. Perhaps no one has given us the anatomy of the vine so clearly as is done by Dr. Mohr in his admirable little work, "The Grape Vine," translated by Horticoia. For our purpose we cannot do better than present his figures and condense his account of it. If we look at the stem of a vine, whether it is growing in summer, or now, while it is bare of leaves, it is plain to see that it is made up of a succession of joints, a leaf, or place where a leaf has been, a space of



Fig. 2.—SHOOT OF THE VINE.

vine for a few inches that does not bear anything, another leaf, and so on, the whole stem being a repetition of this. The point to which the leaf is attached is called the *node*, and the space between the nodes is an *internode*, a term not much used in speaking of the vine. The *node* is a point, the understanding of which is



Fig. 1.—FLOWER OF SPICE-BUSH.

The Spice-bush—*Lindera Benzoin*.

These wintry days will soon be over, and the lover of native plants will be on the lookout for the first indications of returning spring. If he takes a tramp in the woods he will find that the buds of the Spice-bush are among the earliest things to show signs of life, and that when winter is fairly over, often as early as March, the impatient, swollen buds can contain the secret no longer, but burst their envelopes and cover the straggling bush with pale yellow flowers, which, later, would appear quite inconspicuous, but coming so early they seem really gay. The Spice-bush is rather common in damp woods from New England to the Gulf of Mexico; it forms a shrub of five to ten feet high, with long and rather weak branches. The flowers are small, in little clusters, and both sterile and fertile ones are borne on the same bush. Fig. 1 shows a twig as it appears in flower, which is before the leaves expand, and figure 2 gives the leaves and the berries all of the natural size. The structure of the flower is interesting to the botanist, but is not easy to explain to the general reader. It is sufficient to say that there is no corolla, but what appears like one is a colored calyx, and that there are several rows of curiously shaped stamens. The berries are red and shining. All parts of the plant have a strong aromatic odor which is to some persons disagreeable; the shrub is closely related to *Sassafras*, and, like that, has been used as an aromatic stimulant, and from its having been employed medicinally is in some parts of the country known by the name of Fever-bush.

This shrub has had a hard time with its botanical name; it was first called *Laurus Ben-*

zoin, it being considered by Linnaeus as a Laurel, and the specific name, *Benzoin*, was given from a resemblance of its odor to that of the aromatic drug Benzoin. It being found not to be a *Laurus*, Nees made a new genus and took the old specific name *Benzoin* for it, and for a long time the shrub went under the name of *Benzoin odoriferum*. Nees had overlooked the fact that Thunberg had many years before made a new genus for it, and called it after a Swedish botanist, Linder, *Lindera*, a name which, according to botanical rules, we are obliged to adopt and call the shrub *Lindera Benzoin*. We call attention to this shrub as one of the natives of our woods that has been almost overlooked by cultivators. Though it naturally prefers a damp and shaded locality, it does perfectly well when transferred to drier and open grounds. Its natural habit, though not without grace, is rather too loose and straggling for the lawn or shrubbery, but it bears severe cutting kindly, and may be pruned into a compact shape. It certainly has good claims to a place among ornamental shrubs, not only on account of its early flowering, but for the beauty of its foliage and brilliancy of its berries. The shrub, if removed in spring, should be taken up very early; it is very readily recognized

by its brownish yellow buds, and if there is any doubt about its identity, the aromatic taste of the twigs, which is unlike that of any other of our native shrubs, will aid in determining it.

Apple Stocks from Cuttings.

The failure of some varieties of fruit, of the apple especially, to do well in certain localities or in particular orchards, is not to be accounted for by any unsuitableness of soil or aspect, nor can the insects and fungi, which often do so much mischief, be held responsible for the trouble. There is one thing that is generally overlooked, but which, we think, has great influence in the matter—that is, uncongeniality of the stock. As far as the stock goes, the propagator is working in the dark. Seeds are sown, plants grow, and all that the nurseryman knows about them is that some are vigorous and good stocks, and others are poor, and to be rejected. The stocks are all seedlings, and even if it were known from what variety of apple or pear they came, it would not help the matter, as they might or might not inherit the habit of growth of their parents. We know that certain varieties are freer growing, are more hardy, and have other qualities that make them to be preferred as stocks over other sorts that are of a different character. In grafting a known sort of fruit into a seedling stock, we have to run the risk of the two being suited to each other. There is no immediate change to be looked for in the manner of propagating trees on the large scale, but there is one direction in which experimenters should turn their attention, and that is to find some suitable stock which can be freely grown from cuttings. The Paradise stock, used for dwarf apples, is readily propagated by stool



Fig. 2.—FRUIT AND LEAVES OF SPICE-BUSH.

layers, and there are in Europe several varieties of apple which make good stocks without dwarfing the trees, that grow readily from cuttings. Rivers gives an account of the Burr Knot Apple, a good kitchen fruit, and which grows from stout two and three year old shoots stuck in the ground. Several kinds of the Burr Knot are known, one of which is called "Hyde's Walking-stick Apple," because an old gentleman by the name of Hyde used to stick a branch of it where an apple tree was wanted. Among our hundreds of varieties of apples there may be some that will root from cuttings, with sufficient readiness to form stocks, and though this method of propagation is likely to be too expensive and troublesome for the commercial grower, it would be a great advantage to the private propagator, as he would always be sure of having a stock of a known character.

THE JERUSALEM ARTICHOKE.—The Jerusalem Artichoke is the tuber of a perennial sun-flower, and not the Artichoke proper, which is the flower-head of a thistle-like plant. The Jerusalem Artichoke has received very little attention as a cultivated plant, and is mainly to be found in old gardens, where it is suffered to exist, rather than encouraged to grow. Mr. J. Rohé, Mt. Lebanon, N. Y., says: "Dig the tubers early in the spring, and cook them just as you would vegetable oysters, than which I consider them much better. They grow sweeter by re-cooking and make a very good dish. Fed to cows, raw or boiled, I look upon them as very valuable, and they are quite prolific and of the easiest culture." Much has been said in foreign journals, within a few years, of the agricultural value of this plant, and reliable information as to its productiveness is much needed.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Do you keep a Household Journal?

A correspondent speaks of the keeping of a journal of family events as one of the pleasures of life. Of the utility of such a practice we have no doubt. It would probably be irksome to many at first, but would soon come to be a pleasant part of the daily routine. The pocket diaries published so cheaply in all our large cities have space enough to enter every thing that would be desirable. If one of these, furnished with a good pencil, were kept in the work-basket beside the needle case and the scissors, it would take but a few moments each day to make a record of passing events. One of the items appropriately kept in such a journal should be the family expenses, and there is usually a place at the end of these diaries where such an account can be arranged in an orderly manner, and footed up each month. The family expenses might be arranged under the heads of table, wardrobe, fuel, lights, service, education, travel, etc., and at the end of each month the heads of the family could tell very nearly whether they had spent more than they had earned. The whole secret of thrift in the household depends upon spending less than the income. Multitudes take no particular pains to ascertain either their income or expenses. They never know whether they are getting on or falling behind. They are never ready to settle accounts, and they live upon credit until nobody will trust them. It is true there are some difficulties in the way of a farmer keeping such an account, that would not embarrass a day laborer or a salaried man. These receive so much in wages or salary and know definitely how much they have to spend every day or every week. But the farmer provides very largely for his own wants, owns his house, perhaps, supplies his own fuel, and, in large part, his table. But it would not take long to ascertain how much wheat, corn, rye, potatoes, poultry, etc., of his own production, are consumed in the family, and what their market value is. If the estimate were made it would enable him to tell very nearly the expense of his housekeeping each month, and at the close of the year, when the account of crops was taken, he could tell very nearly what his income was. This definite knowledge would operate favorably upon a farmer's fortunes in many ways. He could check extravagance if he found it. He could retrench expenses if he found he was living beyond his income. He could get the new carriage or harness, or the piano for Kate, if the state of his finances justified it, without any uncomfortable apprehensions. If a man is not clear-headed enough to keep accounts and live within his income, his wife should take hold and help him in his book-keeping. The temporal prosperity of the family depends upon correct figures.

Other items should find a place under their appropriate dates,—births, deaths, and marriages in the circle of near relatives and friends, the beginning of the school, remarkable extremes in the weather, political, social, and ecclesiastical events, the blossoming of fruit trees, and the first appearance of birds in the spring, the time of sowing or planting the principal crops, the several plantings in the garden, and every thing likely to be of interest in future years. Such a record, faithfully kept, would introduce system into the whole household. It would lead to definite knowledge of many things that now pass unobserved. It would cultivate the habit of observation, which is worth quite as much upon the farm as in any other calling. It is often a matter of very great importance to know just when an event happened, when a tree was planted, when it bore its first fruit, the date of a cold snap, and the record of the thermometer. Legal decisions involving large sums frequently depend upon the memory of such small events. Recording them in a journal preserves an accurate knowledge of them, and is valuable for reference in future years.

Not the least inducement to keep such a journal is its value as an heir-loom to the children, ever in-

creasing in interest as it goes down to the coming generations. What would we give for such a record of the incidents in the daily life of our early ancestors in this country! It would afford a very good outline of their domestic life and of their characters. It would be better than their portraits, for it would show us their surroundings, their style of living, and much of the men and women themselves. The bold doctrine of Sartor Resartus that clothing makes the man may not be true. If we could add to the work of the tailor, that of the schoolmaster and the pastor, the grocer and the butcher, and all the men with whom they had daily intercourse, we should see our forefathers very much as they were. Keep a household journal.



FRAME OF PINE TWIGS.

Household Ornaments.

It is often a convenience to be able to hang a photograph or small picture by the writing desk or the toilet table, to be always in sight. The illustration shows a rustic frame of suitable size for cartes de visite. It is made of the smallest twigs of the common Norway Spruce, about $\frac{1}{2}$ of an inch in diameter. The twigs may be cut at any time when it is convenient, and after lying a few days the leaves will drop off. The natural color is pleasing to the eye, and nothing needs to be done to prepare them for the frame. Cut the side pieces of suitable length, with cross pieces for top and bottom. These are to be fastened at the joints with pins. The additional pieces above and below are fastened at the crossing with needle and thread, and the picture is kept in its place by a stitch at each corner. These can be made very readily by the boys and girls with a little showing, and a great variety of tasteful patterns may be wrought with the small twigs. If stouter limbs, a half inch or more in diameter, are taken, the frames can be made much larger and of a more substantial character. If stouter ones they can be fastened with glue, and they will last many years. Skillfully made, they are nice presents for friends, especially when they inclose the donor's likeness. They are frequently manufactured for fairs, and bring very handsome returns for the labor invested in them. They cultivate the taste and ingenuity of the young, and are especially valuable for this reason.

Skating for Girls.

An anxious mother wishes to know if this is a proper amusement for girls. We can see no reasonable objection to it on the score of health or morals. We have known occasional instances of injury to the health from indulgence in this amusement, but it was clearly traceable to unsuitable clothing, and imprudent exposure after the exercise. The same causes would have been quite as damaging to the health of boys. It is a very common error to suppose that girls need clothing less substantial than their brothers, because they usu-

ally spend much less of their time in the open air. This is rather an argument for warmer clothing, that they may feel the change less, and be guarded against taking cold. Too thin clothing for girls is a radical vice in our household economy. A great outcry against thin shoes was made a few years ago, and the fashion was changed very much for the better. But this was only a single item in which reform was demanded. The girl is quite as sensitive to cold as her brother, and demands as much clothing from head to foot. The want of it accounts for much of the neuralgia, the rheumatism, and diseases of the throat and lungs, that afflict our American women. The English set us an admirable example in this respect. With a climate much less severe than ours in winter, they dress much warmer, and their women are trained from girlhood to out-door pursuits and amusements. They grow up with robust constitutions, well acquainted with the mysteries of the field and the garden, of the barn and stock-yard, as much accustomed to riding and walking, and as capable of enduring fatigue as man. Their shoes may be a little clumsy, and their complexion not so delicate, but they have what is better than any external grace, sound bodies, and that good common sense which comes of practical acquaintance with out-door life. Their refinement is not measured by dress and complexion.

We have welcomed the present fashion of skating because it took our girls more into the open air, and enabled them to share the amusements of the other sex. It is not necessarily too severe, it strengthens the muscles, and accustoms the body to graceful movements. For aught we can see, the girls take to it as kindly as the boys, and it is quite as helpful in their physical training. Of course this amusement, like any other, needs regulation, and must have its appropriate times and places. It may become a mania and interfere with more important matters. It may lead to midnight excursions and bad company. There is no place of absolute safety, either in work or play, for the young. They need amusements quite as much as work, and kindly oversight and guidance in both.

Economy in Food.

With a bountiful harvest in most parts of our country, there is a want of prosperity, and the need of a more rigid economy than most families are accustomed to practice. In the South much suffering is reported, though the corn and wheat crops were abundant. In the North trade is dull and many failures have already taken place. Manufacturers are reducing their labor, and many are thrown out of employment. In the cities and towns mechanics and laborers are not fully occupied, and they have to live on smaller incomes. All classes suffer in this general depression and must study economy. This virtue was practiced from stern necessity by former generations, but in our own time the tendency is all toward luxury and extravagance. The young begin where their fathers left off, and without much thought of the consequences, spend as freely as if they had the income of their fathers. There is great waste at the table especially. Much of the food is spoiled in cooking, much is left upon the plate to be thrown away, and hardly a thought is bestowed upon the amount of nourishment furnished by the different varieties of food offered in the market. Many will now have to study the problem of nourishment in the cheaper forms; and the experience of smaller incomes, if rightly improved, will be profitable. An average German or French family will live on half the income of an American, and keep in good physical condition. It is not necessary to good health to buy Porter-house steak, or the dearest cuts of lamb and mutton. A soup prepared from meat costing one-fourth as much will appease hunger, and will go quite as far in sustaining the laboring man, though it may not please the appetite quite as well. As a rule, we eat much more meat than Europeans, more than is good for our best physical development and sustenance. A bushel of corn has about the same alimentary value as a

bushel of wheat, while it costs but half as much; yet upon the tables of many persons of small incomes, corn never makes its appearance. Properly cooked it makes excellent bread, and in the hands of the skillful housewife, it is wrought into a great variety of appetizing articles. It is attractive as hasty pudding, hominy, samp, and hulled corn. In the whole tribe of Johnny cakes and Indian puddings, it is glorious, as every one knows who has tested the many recipes that we have published in our back volumes. Then, in farmers' families, there is often a great dearth of vegetables. The potato and turnip are universal, but the cauliflower, the more delicate kinds of cabbage, the beet, carrot, parsnip, horseradish, and celery, that might be on the table all through the winter, are quite frequently wanting. In summer the kitchen garden is quite too much neglected, and the citizen fares much better than the farmer, who might have all the vegetables at small cost at his own door. A good garden will half support a family, and the man who owns a small piece of land near his home can get wholesome food cheaper from this source than from any other. In the economy which must needs be practiced henceforth, determine to make the most of this source of supply. More fruits and vegetables of your own raising, and less meat, will be a sound maxim in the household economy. And while upon this topic we must not overlook the dish of baked beans, which was the main stay in New England families in the early days, and which still makes its regular appearance with Sunday morning in many Yankee homes. It is said that this esculent furnishes more nourishment for the price than anything else in the market. This is probably so. We know it to be savory and cheap in all the forms in which it comes to our table. It is an indispensable item in compounding succotash, a dish that is welcome once a week the year round, and is nearly as good in winter as in summer. It makes excellent soup. As porridge, it is said to be best nine days old. It usually disappears on the first day, and we cannot speak for a greater age. The Lima bean, gathered fully ripe, or when the pod is green, and dried, is an excellent vegetable served with all meats, and ought to be as common as the potato.

To Our Household Correspondents.

The pressure is, in part, removed from this department, though we have still on hand several good recipes waiting their appropriate season, and other material. We desire that these columns should be made the medium of communication among our readers on matters of common interest in the household. If the reader has any article of ornament or use that is particularly prized, tell us what it is and how to make it, that it may benefit entire the *Agriculturist* family, which is now spread over the whole country and even in foreign lands. A multitude of houses that we visit need just the convenience that is such a comfort to you, and would have it if it were made known. We want hints and suggestions, brief essays upon all that pertains to household economy.

How to Entertain Guests.

Emerson says: "I pray you, O excellent wife, not to cumber yourself and me to get a rich dinner for this man, or this woman, who has alighted at our gate, nor a bed-chamber made ready at too great a cost. These things, if they are curious in, they can get for a dollar at any village. But let this stranger see, if he will, in your looks, in your accent and behavior, your heart and earnestness, your thought and will, what he cannot buy at any price, at any village or city, and which he may well travel fifty miles, and dine sparsely, and sleep hard, in order to behold. Certainly let the board be spread and the bed be dressed for the traveler; but let not the emphasis of hospitality be in these things. Honor to the house where they are simple to the verge of hardship, so that the intellect is awake and sees the laws of the universe, the soul

worships truth and love, honor and courtesy flow into all deeds."

The most obtuse must see in this quotation the whole philosophy of hospitality. One of the greatest delights of having a home of our own is to have in it a place for friends and strangers. We do not build a house simply to meet the wants of our own families. We have one or more guest chambers and the extension table, to which we may welcome our friends. The larger a man's means, the more liberal provision he makes for hospitality. They are greatly to be pitied who can barely supply their own physical wants, who dwell always in narrow quarters, who have no pillow or plate for friend or stranger. The farm-house generally has room enough for all, and some that we wot of have an indefinite power of expansion, that rivals India rubber. The rail car of our cities is not more accommodating. There is always room for one more, and where the welcome is so hearty, the one more sends his regrets for absence, and comes next time. There are others with houses roomy enough, but unblest with friends the year round. No one breathes the fragrance of their roses, or wipes the bloom from the clusters that are supposed to grace their tables. They live to themselves very elegantly and comfortably, it may be, but very narrowly and selfishly. The door-step is always clean, and the lawn in front always shorn. It is kept for the eyes and not for the feet. No children play there. The dogs are not at home there. We hope the folks are, and enjoy it.

There are others who would like to make their friends welcome, but spoil their pleasure by over exertion. The guests are made to feel uneasy by the visible effort put forth to entertain them. The whole secret of putting our friends at their ease is to be at ease ourselves. And in order to be thus, we must not misinterpret their visit. They have not come to see our furniture, our equipage, our dress, but ourselves. Courtesy, then, rather demands our society and conversation than our silver ware and cookery. There is no objection, of course, to the best tea urn and the cups and saucers to match, but they should set upon the table as if they were every-day ware. By all means kill the turkey, if that is your humor, but do not tell the guest that the bird has been waiting his coming a month. Let the rare dish be served up with as much ease as if it were always upon your table. Keep your art, whatever it may be, out of sight. Do not let your guest suspect that you are making an effort to entertain him, lest he go away pained with the feeling that he has been a burden to you, and never come again. Study his aptitudes and tastes, and make him instruct you in those things of which you know little and would like to know more. He must be a rare man if he have not some experiences in life to which you are a stranger. He comes from another sphere of toil, and has different surroundings from your own. Make him your superior and benefactor, by drawing out of him his knowledge and experience for your own benefit. So shall you part at the gate, both enriched in your mental and social natures.

Nor should we turn aside wholly from the routine of our daily life to make our guests welcome. Every one worthy to sit at your table knows that life has its necessary duties. Do not burden him with the thought that your business is suffering derangement and loss by his coming. Your intercourse will be all the sweeter and more profitable for coming in the intervals of your regular cares. Give him to-day only that which you have to spare to-day, that there may be no strain on the morrow to recover your lost possession, and no wish in your heart that he had not come when he did, or had not come at all.

Frost Bitten Feet.

These are in order at this season of the year, in all careless families, and in some that are quite careful. This is one of the cases in which an ounce of prevention is better than a pound of cure. But if the ounce has not been taken, and the frost has,

much depends upon timely remedies. The feet should be put immediately into cold water and thawed out very gradually. The sudden thawing does more injury than the frost. Apply sweet oil or the glycerine ointment mentioned in last month's Basket, to the injured parts, and keep quiet until the system has time to repair damages.

To Prevent Stoves from Rusting.

A correspondent asks how to prevent stoves from rusting. One who speaks from long experience recommends common stove blacking, and no kind of oil but elbow grease. Much depends upon the condition in which stoves are put away, and upon the place of deposit. If in a filthy, rusty condition, they will rust still more. If put in a cellar or damp place they will be likely to rust with any amount of polish. If thoroughly polished—the elbow grease not spared—and set in the garret or upper chamber, they will ordinarily go through without damage. But as mortals are engaged in the manufacture of stove polish, and as servants that ply the brush are also mortal, we advise the housekeeper to look occasionally at stoves not in use.

Recipes for Cooking.

The following are contributed by Mrs. D. W. Sutton, Westchester County, New York.

Crumplets.—Make a batter of one quart of milk and flour, add a little salt, and one half cup of yeast; when very light, add nearly one cup of butter; bake on a greased griddle in rings.

Muffins.—To a batter of one quart of milk, add 4 eggs, a little salt, and half cup of melted butter; may be baked in small tins in the oven instead of in rings on a griddle. They may be made of rye.

Cream Muffins.—One pint of cream, one pint of flour, a little salt, and three eggs, well beaten, and one half teaspoonful soda; stir the whites in last. Nice baked in new cups, kept clean with dry cloth, and not wet or greased.

Rusk.—One pint bowl of light sponge, with two potatoes mashed *fine*, added while warm; one half cup of melted butter, one cup of sugar, sponged with two cups of milk. When light, knead up and make into biscuits, or roll out with a tumbler; place close together, when very light again, bake; when a little browned, wash with sweetened milk.

Rusk with Eggs.—One pint bowl of light sponge, one half cup of melted butter, one cup of sugar, and two to four eggs, sponge. When light, knead and form into biscuit; then when very light, bake. If washed with sweetened milk or water when nearly done, it will give them a nice color. The same recipe will also make nice doughnuts.

Pop Overs.—Butter two cups of milk with two cups of flour, add the yolks of two eggs, a little salt, lastly the whites; bake in small tins.

Corn Griddle Cakes.—Three cups of meal, one cup of flour, one cup of sour cream, one cup of sugar, three eggs, well beaten, a little saleratus and salt, thinned with milk.

Potato Cakes.—To a scant half peck of potatoes grated, add two eggs, salt, thicken with a little flour, and fry in a spider, or bake. Boiled grated potatoes may be used, but are not quite so nice.

Soda Biscuit.—Rub up fine into five tumblers of sifted flour a lump of butter or lard the size of a large egg; if lard, add more salt. Before the flour is sifted, stir in one teaspoonful of soda, and two of cream tartar, thoroughly mixed; add enough sweet milk or water to make it knead nicely, then either make into cakes with the hand, or roll out and cut up to suit the fancy, and bake in a rather quick oven. *Another.*—Eight tumblers of flour sifted with two teaspoonfuls of soda, and four of cream tartar, and butter the size of two eggs, and wet with sweet milk enough to knead nicely. Sour milk and less shortening may be used, instead of cream tartar which disagrees with some.

BOYS & GIRLS' COLUMNS.

What Little Folks Can Do.

A great army with banners flying, drums beating, and guns brightly gleaming in the sunlight, marched to overpower the forces of a nation with which they were at war. They had been victorious in many a hard fought battle, and their present foes were already retreating before them; they were sure of another triumph. "How can we withstand them?" anxiously inquired the generals of the retreating force. "If the little white warriors of the North would only come to our aid, then we need not fear," they said among themselves. Still the army advanced like a torrent that nothing could hinder. "See, here is a great city," they exclaimed, as they drew near a famous place, where churches, towers, stores, and dwellings, spread out before them for miles. "Here will we rest, and have merry times in the houses of our enemies!" and they thought of the gay revels they had enjoyed in other cities. "Let us get the red people to help us," exclaimed the retreating force, as the invaders drew near. They had always kept the red people for servants. These were very savage in their disposition, and also very hungry, and had they not been carefully watched, would have eaten up or destroyed everything the city contained. "Yes, we will set the red people free," said the desperate fugitives, "and they shall fight our foes until the white warriors of the North come to our assistance." So every man turned his servants loose, giving them permission to hold a grand carnival. Away they flew as though mad with delight. They whirled through the houses, seized upon everything within their reach, climbed upon each other's shoulders to get at the highest places, and soon were in a most furious frolic. "Fire!" "Fire!" shouted the soldiers, for soon these imps had the whole city in a blaze. Houses, stores, churches, and towers, came crashing to the ground, and the red people danced about the ruins in frenzied glee. In vain the soldiers fought them; not until the proud city was in ruins did the terrible carnival end, and the red people sink away and hide themselves in holes and corners. But now a more terrible foe appeared. The white warriors of the North came riding to the conflict, each on a snow white charger, and armed with a diamond pointed spear. Yet they did not seem so terrible, for they were so small that you might hold more than a hundred of them in your hand, and crush them all by closing it. But then there were such countless numbers of them, and they were so bold! As far as the eye could reach, they appeared trooping in sight, and day after day, and night after night, they still came on. They would charge right into the midst of the fierce soldiers, smite them in the face, strive to pierce their heavy boots, entangle their feet, and with blow after blow they so kept up the contest that ere long the bravest men lost heart, the stoutest horses were overcome and snuk exhausted upon the field. A retreat was commenced, but still the little white warriors came pouring on, and of the hundred thousands of men who marched forth so confidently, but a straggling handful ever returned to tell of the horrible sufferings they had endured, and of the sad deaths of their companions in that terrible retreat from Moscow. There! now, you have discovered that the red people were the little sparks of fire, and the white warriors were only snow-flakes, and remember that by each little one doing his part, great things were accomplished. So, little folks, do your part in this world well, and more wonderful things yet will follow.

Bread Cast on the Waters.

A young man living in New York at the time of the discovery of gold in California, was led by the prevailing excitement to sell all he had here and travel to that land of promise. He arrived safely, made his way to the mountains, and worked hard for months, but with little success. Soon his money was gone, his clothes nearly worn out, and he must either starve or find his way back to San Francisco, and get employment there. He started on foot, and slowly made his journey. One afternoon he came to the bank of a stream which must be crossed. A ferryman was ready with a row boat. "What is your charge?" asked the traveler. "One dollar, sir." "Well, I shall have to foot it up the stream until I can find a crossing place." "Are you hard up?" asked the ferryman. "I'm dead broke," was the desponding reply. "Jump in, I'm not the man to send a fellow adrift!" and with a few vigorous strokes they were soon in the middle of the stream. Here the boatman stopped rowing and, looking into his face, asked, "Is your name Jones?" "Yes," replied the other, with a start at finding himself recognized. "Didn't your father belong to the church in — street?" "Yes." "I thought so," and with that he drew from his pocket a bag and commenced counting out gold pieces. "I have made five hundred dollars by ferrying passengers; here are three hundred of them for you. You can pay me when you are *rich*, or if that don't happen, then all right. You think I'm crazy, perhaps,"

continued he, observing the astonished looks of the traveler, "but I was never in better senses in my life. When I was a little boy and my mother was a poor widow, many a time has your father visited our home, and when he had gone, somewhere about the room we would find money for a barrel of flour, or to pay the rent, when we knew not before where it was to come from; and as long as I live, if I have only a crust, when I find one of his sons in want, he shall get the biggest half." The loan was gratefully accepted, by its aid the traveler was able to reach San Francisco, earn enough to repay his benefactor, and return safely to his home. This story, with the exception of the name, is a true one, related by the traveler himself, illustrating the precept, "Cast thy bread upon the waters; for thou shalt find it after many days."

Habits of Sheep—A Man in a ludicrous Position.

An exchange publishes the following: "Sheep perseveringly follow their leader wherever he goes; but, if in case of sudden alarm, any one of the flock runs forward to escape, and thus takes the lead, the rest generally follow him, regardless of any obstructions. Of this singular disposition we once witnessed an instance in Cleveland, Ohio. A butcher's boy was driving about twenty fat sheep through the city; but they ran down a street along which he did not want them to go. He observed a scavenger at work with his broom a little way before them, and called out loudly for him to stop the sheep. The man accordingly did what he could to turn them back, running from side to side, always opposing himself to their passage, and brandishing his broom with great dexterity; but the sheep, much agitated, pressed forward, and at last one of them came right up to the man, who, fearing it was about to jump over his head while he was stooping, grasped the short broomstick in both hands, and held it over his head. He stood for a few seconds in this position, when the sheep made a spring, and jumped fairly over him, without touching the broom. The first had no sooner cleared this impediment than another followed, and another, in such quick succession that the man, perfectly confounded, seemed to lose all recollection, and stood in the same attitude till the whole had jumped over him, not one attempting to pass on either side, though the street was quite clear. As this took place during wet weather, as may be easily imagined, the man was entirely bespattered with dirt before they had all passed; and it is impossible to conceive a more ludicrous appearance than the poor fellow made on the occasion."

Tumble Bugs.

I suppose all little people who have ever lived in the country are acquainted with the dusty, awkward, black beetle, which often goes by the name of tumble bug. The name was probably given to it because it is always rolling about a great ball of manure twice as large as itself, and tumbling over it in a very ungraceful manner. This seems rather hard ball playing to be kept up all the long summer days, and, in fact, it is no play at all, but real work—the daily work of this beetle, just as all other beetles, bugs, and flies, have their work, each in its own way, while they seem to be humming and buzzing so lazily in the sun.

It is easy to see that this rusty, tumble bug beetle is a plebeian among insects, quite coarse and dirty—or, as some people might say, disgusting. While the wealthy, respectable bee is making beautiful little cells of wax for her future young, and laying up great stores of rich, sweet honey for them, the mother tumble bug is just as busy providing for her children according to her means and understanding. Not knowing how to make wax-cells, and having no suitable wings to fly among the flowers for honey, she lays her eggs on a bit of soft, barnyard manure, and then rolls it over and over with great patience, until the ball is large enough to supply her young ones with food as long as they are unable to help themselves. In time, the little maggots come out of the eggs,—for the infant tumble bugs are not at all like their mother,—and it is only after they have eaten their way out of the balls that they gradually change from their grub or larva state into dusty, hard working beetles.

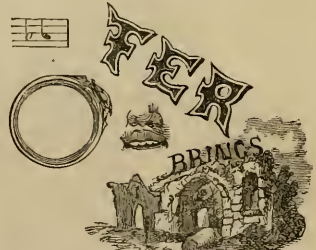
A Railway Incident.

The Duke of Argyll and the Duke of Northumberland were traveling together in a railway car in England, when a traveling salesman entered the apartment with them. All were very sociable and the conversation was unrestrained, the clerk not knowing who were his companions. At one of the stations the Duke of Northumberland got out and was received by a large number of servants, who conducted him to his splendid carriage that stood waiting. "That must be some great *arcel*," said the salesman to the remaining Duke. "That is the Duke of Northumberland," was the reply. "Is it possible," replied the salesman, much astonished, "and only to think how free he was with two little snobs like us!"

New Puzzles to be Answered.



No. 296. Puzzle Picture.—The Old Man of the Woods will be found somewhere in company with the baboon; the latter is much the better looking of the two.



No. 297. Illustrated Rebus.—Well worth remembering.



No. 298.—A large animal mentioned in the Bible.

Answers to Problems and Puzzles.

The following are answers to the puzzles in the January number, page 27. No. 291.—"Plow deep while slugs sleep, And you will have corn to use and to keep." ... No. 292.—"Waste not, want not." ... No. 293.—"Colubus in chains." ... No. 294.—"Be backward in pough, but be over on time." ... No. 295.—"A Roman knows no fear. The following have sent correct answers to some of the puzzles previously published. W. F. Gale, L. I. Ford, Alfred Bobbie, L. M. Wright, H. Augusta Worcester, R. M. Swan, J. Milton Snyder, W. T. Fuller, E. H. Field, H. L. Horner, Jr., Sanford Horton, N. E. Melick, "F." D. H. Noon, M. A. Hamish, J. Milton Snyder, Geo. C. Fount, S. W. Smith, Jas. W. Foster, C. Sumner Warhouse, Willie W. Stockton, Ray Billingsley, John Anstin, Richard H. Wilson, Madeline Burt, C. J. Thomas, "Time-piece," J. H. Gray, Wm. H. Heath, Isaac Tall Lulu, Isabella Lucy Stewart, Geo. M. Park, J. H. Gray, Mollie Kerr, Knickerbocker, Martin H. Horning.



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THE TIRED MATCH GIRL. — Engraved for the American Agriculturist by J. Langridge.

Poor, tired, girl! We should not like to follow her in her daily round, through the long streets, into the stores, up and down the stairs into offices, repulsed with a gruff "no," by busy men, hustled out of doors by rough porters, stared at, teased, perhaps insulted, by thoughtless or vicious boys, and seldom greeted with a kind word. If this life be continued, in a few years that fair, round, face, will be sharpened by exposure and want, and its sweet expression spoiled by the evil thoughts and passions which street life is almost sure to produce. Why should the child be thus pitilessly thrust out into the world? The place for her is at home under the tender care of a mother, or at school, to be guided by faithful teachers to intelligent, useful, virtuous, and happy life. But she has no home. The place where her drunken father and sick mother stay is some dark, cold, garret, or damp and filthy cellar—the street is better than that. She is driven forth, day by day, with threats of punishment, if she fail to bring home a certain amount at night, and the threats are not idle words, for she has often suf-

fered cruel beatings from those who should have been her protectors. Such is the history of hundreds of little "Match girls" in New York and other large cities; girls that, sheltered by such homes as you are blessed with, would be as happy, as attractive, perhaps more worthy every way than those who now despise them because they are poorly clad and live in the street. Think of these things when tempted to speak harshly to such unfortunate ones, or when unhappy because you may not have some things which the children of richer people enjoy; and when it is in your power do something to add at least a smile to the life of these friendless ones!

Seeing the Chips Fly.

Some years ago, a young New Englander found himself in the back part of Pennsylvania, ashore as to the means of living. In this strait he applied to a wealthy Quaker in the neighborhood for help. "I will furnish thee with work, and will pay thee for it, friend," said the

Quaker; "but it is not my custom to give alms to one that is able to labor, like thee." "Well, that's all I want," said the Yankee; "of course, I am willing to work." "What can thee do, friend?" "I will do anything to get a little money to help me out of my difficulties." "Well, there is a log yonder, and there is an ax. Take many pounds on the log with the head of the ax, and if thee is diligent and faithful, I will pay thee a dollar a day." "Agreed; I'd as soon do that as anything else." And so the youth went to work and pounded lustily with the head of the ax upon the log. After a time he paused to take breath; then he began again. But after half an hour he stopped, threw down the ax impatiently, and walked away, saying, "I'll be hanged if I'll cut wood without seeing the chips fly!" He could not be blamed much, for nothing is more laborious and unsatisfactory than continuing to work without seeing any results.

Conundrum.—With what sort of a throat can a singer reach high notes? A soar throat, to be sure.

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WHIT

GARDENING FOR PROFIT.

(BY PETER HENDERSON.)

This work has attained a large sale in one season than any other book ever published on Gardening in this country. Its teachings are the experience of 20 years in growing garden products for the great market of New York, and are alike applicable to private or Market Gardening. Price, \$1.50 by Mail, prepaid.

Our Illustrated Catalogue for 1888, of SEEDS and IMPLEMENTS is now ready and will be mailed to all applicants for 25 cts. Also, our Illustrated Catalogue for 1888, of NEW and RARE plants, price 25 cts. But to our customers of last season they will be mailed as usual without charge.

HENDERSON & FLEMING'S SELECTED SEEDS AND PLANTS FOR MARKET GARDENERS AND OTHERS.

	per ounce.	per lb.
Asparagus, Giant.....	10 cts.	75
Beets, Early Bassano, Short Top Round	20 "	2.00
" Henderson's Fine Apple, Long Smooth dark Blood.....	20 "	2.00
Cabbage, Early true Jersey Wakefield.....	150 "	16.00
" Early Ox Heart, Winoingstadt.....	40 "	4.00
" Dutch.....	40 "	4.00
" (Late) Flat Dutch, Bergen, Drumhead.....	40 "	4.00
Carrot, Early Hero, Long Orange.....	20 "	2.00
Cauliflower, Early Paris, Nonpareil.....	150 "	16.00
Celery, New Dwarf White, Boston Market.....	1.00 "	12.00
" White Solid, Red Solid.....	40 "	4.00
Cucumber, White Spine, Cluster, Long Green.....	15 "	1.50
Egg Plant, New York Improved Large Purple.....	1.50 "	12.00
Lettuce, Simpson, Butter, White Summer.....	40 "	4.00
Melon, Citron, Notmeg, Skillman.....	20 "	2.00
" (Water) Ice Cream, Mt. Sprout, Black Spanish.....	20 "	1.50
Okra, Tall and Dwarf.....	20 "	2.00
Onion, Red, Yellow Dutch, Danvers.....	25 "	3.00
" White.....	40 "	4.00
Parley, Extra Dwarf Corled.....	15 "	1.50
Pumpkin, Cheese, Crossed Field, Haddish, Scarlet Turnip, Long Scarlet.....	15 "	1.50
Saladish, White Oyster Plant, Scorzenera, Black Oyster Plant.....	20 "	2.00
Spinach, Round and Prickly.....	10 "	75
Squash, White and Yellow Bush, Crook-neck.....	15 "	1.50
" (Late) Boston Marrow, Hubbard.....	25 "	2.50
Tomato, Early Smooth Red, Folee.....	30 "	4.00
Turnip, Red Top, White Dutch, Yellow Rutabaga.....	10 "	1.00
Herbs, Thyme, Sweet Marjoram.....	50 "	6.00
" Sage, Summer Savory.....	30 "	4.00

	per qt.	per bush.
Beans, (Bush), Valentine, Refugee, Mohawk.....	\$ 50 "	\$12.00
" (Pole), London Horticultural, Red Crackerby.....	75 "	15.00
" Large White Lima.....	1.00 "	18.00
Corn, Dwarf Prolific, Asylum, Evergreen.....	30 "	6.00

Cedar Hill Early Tomato.



This variety (illustrated above) as tested by us and other Market Gardeners in the vicinity of New York, combines the qualities of

EARLINESS,

GOOD SIZE,

SOLIDITY, and

PRODUCTIVENESS,

In a greater degree than any other variety, and consequently we consider it superior to any other in cultivation, either for private use or for Market purposes.

Price 25 cts. per packet; \$2.50 per doz.; \$15.00 per 100.

	per qt.	per bush.
Peas, (Early), Dan'l. O'Rourke, Ex. Early Kent.....	\$ 30 "	\$ 7.00
" (Second crop), Champion, Napoleon, Blue Imperial.....	40 "	9.00

PLANTS AND ROOTS.

	per bush.	per dbl.
Onion Sets, Yellow Danvers, Yellow Dutch.....	40 "	6.00
" " White.....	50 "	9.00
Potatoes, Early Goodrich.....	\$3.50	\$ 8.00
" Glenesh.....	1.00	7.00
" Sebce.....	3.00	7.00
" Harrison.....	1.50	15.00
Asparagus Roots, (2 years old), \$1.50 per 100; \$15.00 per 1,000.		

Rhubarb, Victoria and Linnaeus, \$3 per doz.; \$15 per 100.

Cabbage Plants, (Cold Frame), Wakefield, \$1.50 per 100; \$15.00 per 1,000.

" " Hot-bed, 75 cts. per 100; \$6 per 1,000.

Cauliflower, " \$2.00 per 100; \$15 per 1,000.

Horseradish Sets, " \$1.00 per 100; \$5.50 per 1,000.

For other varieties of Vegetable Seeds, together with Flower Seeds, Fertilizers, and Implements, send for general Descriptive Catalogue. All seeds sent free by mail at the prices named, except Beans, Corn, and Peas; for these 5 cts. per lb. must be added for postage.

LAWY GRASS SEED, "Central Park Mixture".....\$6.00 per bushel.

HENDERSON & FLEMING, SEEDSMEN AND MARKET GARDENERS, 67 Nassau Street, NEW YORK.

NEW SEED CATALOGUE for 1868.

J. M. THORBURN & CO., 15 John Street, NEW YORK.

Have the pleasure to announce that their **ANNUAL CATALOGUE OF Vegetable and Agricultural Seeds** for the New Year will be ready for mailing to all applicants in January.

THEODORE CH. WENDEL, IMPORTER & SEEDSMAN, 516 Washington-st., Boston, Mass.

WENDEL'S NEW CATALOGUE for 1868 of Flower and Garden Seeds will be ready to send out by middle of January. It contains many new and rare varieties fresh imported from the most reliable houses in Europe. Sent to all who apply by mail post-paid for 5 cents, and a stamp. I offer freely imported Pear Seeds at the following low price:

500 \$100.00	250 \$50.00
100 \$20.00	50 \$10.00

free of charge on receipt of money on C. O. D.

List of Tree and Forest Seeds free on application.

Address, **THEODORE CH. WENDEL, IMPORTER & SEEDSMAN, 516 Washington-st., Boston, Mass.**

Boston Market Dwarf Celery.

The very best in cultivation, being very solid, and of compact dwarf growth. The Boston market gardeners will use no other. Price, 25 cts. per packet, or \$1 per ounce. Also,

IMPROVED BRUNSWICK CABBAGE SEED, of our own growing. This variety was first introduced by our Mr. Schlegel, price 25 or 50 cents per packet, or \$1 per ounce, free by mail. We offer a large and well selected stock of all the leading varieties of seeds. Send for a Catalogue.

Write your address plain.

A. SCHLEGEL & CO., 10 South Market-st., Boston, Mass.

Correspondence in English or German.

CANE SEED.

Regular Sorgo, Siberian Oomseana, Neeazana. WARRANTED PURE.

Send for Circular. **BLYMERT, NORTON & CO., Cincinnati, Ohio.**

James J. H. Gregory, GROWER & IMPORTER OF CHOICE VEGETABLE SEEDS, Marblehead, Mass.

As the original introducer of the Hubbard Squash, Marblehead Mammoth Cabbage, and many other choice vegetables, I invite the attention of the public to my Seed Catalogue for 1868, which will be sent free to all applicants. Those who sent to me for seed last year will receive it by writing for it. *I make new and rare vegetables a specialty.* I have cultivated on my three acres this season over fifty acres of seeds and seed stock. These farms are over a mile from each other, and the fields of two of them are much sequestered, thus giving me the ability to grow many varieties of seed of the same kind, while each variety is so perfectly isolated as to ensure purity. On these three farms I have raised over 100 varieties of vegetable seeds the past season, including nine varieties of Cabbage Seed, eighteen of Tomato, five of Onion, six of Beet, four of Carrot, seven of Cucumber, fifteen of Corn, five of table Peas, nine of bush Beans, six of pole Beans, seven of Squash, four of Mangel Wurzels, &c., &c.

I can import or buy, as chance offers, much of this seed at about one half what it costs me to raise it, but I do so that I may be known and able to warrant it for purity and freshness. The great risk with all seed that a dealer imports or buys of others is, that the dealer knows all that is told him of the careful selection of seed stock, and the freshness and purity of the seed, while the person who offers it though sometimes reliable, may be careless, lenient and or dishonest; and if so, you who plant it have to suffer, as the dealer can only re-affirm what is told him; but if the seed dealer grows his own seed, then he is able to affirm what he himself knows as to its purity and freshness. He selected the stock, planted it, gathered the seed, and prepared it for market, and thus, you who plant it, have this invaluable guarantee from his own knowledge of it. *He that I may be able to give this guarantee that I grow so many varieties at double what it would cost me to purchase any of them, while at the same time the public will not find my prices for standard seeds higher than those of other dealers of repute. There are many varieties which I have to import, and others that I have to purchase from growers; with these I use my best judgment and experience for the security of my patrons.*

If the public wish to encourage this enterprise (which I don't not) and procure their seed directly from the grower I invite a continuation, and will be ready early in February to mail to all applicants enclosing us ten cents. Regular customers supplied without charge.

JAMES J. H. GREGORY, Marblehead, Mass. CURTIS & COB'S SPRING CATALOGUE, 1868.

Our new descriptive priced Catalogue of over one hundred pairs of Vegetable and Flower Seeds, embracing all the novelties and specialties of the season, and a full list of choice Gladioli, will be ready early in February to mail to all applicants enclosing us ten cents. Regular customers supplied without charge.

SEND AT ONCE FOR KNOX'S SMALL FRUIT CATALOGUE.—See page 72.

NEW FLOWER SEEDS AND SPRING BULBS.

J. M. THORBURN & CO., 15 John-street, NEW YORK.

Have the pleasure to announce the completion of their Catalogue of Flower Seeds and Spring Bulbs for 1868.

Resurrection Plants 25 cts. each, by Mail.

CABBAGE SEED, IMPROVED BRUNSWICK.

The Earliest, Shortest Stemmed, and very best Drumhead yet offered. The Boston Market Gardeners all use it in preference to any other, and to show how highly it is esteemed in this market, we will state that it sold readily at \$4.00 per ounce the past season, and all were well satisfied that it is the best variety for either early or late planting; every plant produces a large head, when fully grown, weighing from 20 to 30 lbs., and requiring only ordinary cultivation; the quality is excellent. Mr. John Stone, of Marblehead, Mass., the originator of the well-known Stone Mason Drumhead, allows us to state that he considers it far superior to any Drumhead he has ever seen; he has raised good sized heads of this seed to 50 lbs. from planting the seed. We warrant our stock the purest in the country. For sale in 25 or 50 cent packages.

We have also to offer a small quantity of the *Early Boston Market Tomato Seed*, the best variety for market or family use, price 10 cents per package. By enclosing the amount of your order, we will forward the seed free by mail, sent early, as our stock is limited. Send for Circulars, and Catalogues of Seeds.

A. SCHLEGEL & CO., Seed Warehouse, No. 10 South Market-st., Boston, Mass.

Correspondence in English or German.

Jersey Wakefield Cabbage.

Early Jersey Wakefield Cabbage Seed, warranted true, of my own growing. Per package, 15 cts.; a per ounce, 75 cts. Sent post-paid and warranted to reach each purchaser.

JAMES J. H. GREGORY, Marblehead, Mass.

FLOWER SEEDS. FLOWER SEEDS.

After cultivating over one thousand varieties of Flower Seeds, I have selected about one hundred kinds of the most hardy, showy, and attractive, of which I will furnish, neatly put up, any 33 kinds on the list for \$1, and send by mail with postage prepaid. Send for a Catalogue.

G. R. CALVERTON, Flushing, N. Y.

Send Free-Catalogue of Choice Flower and Vegetable Seeds.

M. O'KEEFE, SON & CO., Seedsmen & Florists, Rochester, N. Y.

Advertisements, to be sure of insertion, must be received **BEFORE** the 5th of the preceding month.

TERMS—(cash before insertion):

Ordinary Pages, \$1.50 per line. Open Pages—\$2 per line.
Business Notices—\$2.50 per line of space, each insertion.

Early Rose Potato.

For a description of this new and valuable variety, see our advertisement in the *Agriculturist* for January, page 32. The following editorial notice from the same paper confirms all that has been said in its favor.

From the *American Agriculturist* of January.

"The Early Rose Potato.—This is a seedling of the Garnet Chili, but unlike its parent in color and quality. Mr. Heffron of Utica, its introducer, informs us that it is more productive than the Early Goodrich, and ten days earlier. It is a very fair and handsome potato, and of most excellent quality. We were present at the trial of some fifteen varieties by a committee of the Penn. Hort. Society, and considered this the best of all. Mr. H. has disposed of his stock to B. K. Bliss & Son."

In consequence of the limited supply, we can only offer it to *One Pound Packages*, which will be sent by mail, post-paid, upon receipt of \$1.00. Orders will be booked in their regular order as received, and potatoes forwarded as soon as the weather will permit. Address

B. K. BLISS & SON, Box 5712, P. O., New York,
Or, 231 Main-st., Springfield, Mass.

SEED POTATOES

Of all the leading varieties, among which are Goodrich's justly celebrated *Harrison*, *Early Goodrich*, *Gleason*, *Calico*, *Cuzco*, and *Garnet Chili*—*Early Handsome*, and *Sutton's Macintosh*, two of the earliest varieties known. *Early Sebec*, or *Boston Market*, *Extra Early White*, *Early Stevens*, *Dykeman*, *Jackson White*, *New White*, *Peach Blossom*, also, *PATERSON'S CELEBRATED ENGLISH SEEDLINGS*, viz.: *Napoleon*, *Victoria*, *Irish Blue*, *Scott's Blue*, *Sherry Blue*, *Forfarshire Red*, *Regent*, *Seedling Rock*, also, *King of the Potatoes*, *Early Frane*, *Red Regent*, *British Queen*, etc. *Four Pound Packages* of either of the above varieties will be mailed to any address, post-paid, upon receipt of *One Dollar*. Six packages, \$5.00; twelve packages, \$9.00. Prices per bushel or barrel will be given upon application.

New English Varieties

Not Before Offered in this Country.

Our stock of these being very small, they are offered in *One Pound Packages* only, which will be mailed to any address upon receipt of *One Dollar*.

Wheeler's Milky White.—A seedling from the Fluke, a second early variety of delicious flavor, and in color as white as milk, remarkable for its freedom from disease, highly prized by English cultivators.

Mona's Pride.—A very early Kidney Potato—of medium size, and of excellent quality—fine for forcing.

Our Descriptive Price List of potatoes will be mailed to all applicants.

B. K. BLISS & SON.

41 Park Row, and 151 Nassau-st.,
(Late Office of Agriculturist.) New York.

Also, 231 Main-st., Springfield, Mass.

NEW CROP ONION SEED.

Mailed post-paid, at the following prices:

	per oz.	lb. pound.
Large Red Wethersfield.....	\$0.25	\$0.75
Early Red.....	0.25	0.75
Yellow Danvers.....	0.25	0.75
Large Yellow Dutch.....	0.25	0.75
White Potato.....	0.25	0.75

Address B. K. BLISS & SON.

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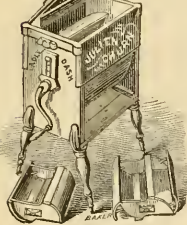
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Mr. W. X. PENNY, of Fishville, Yates Co., N. Y., says in the Country Gentleman of Aug. 20th, 1867: "By the way, we are thrashing by steam, using a six horse portable engine. It works to a charm, just the thing to do a nice job; it does the work of ten horses on a sweep power, and very much better."

The American Agriculturist, in editorial notes, on page 317, Sept. number, 1867, says: "STEAM THRASHERS are a prominent feature in Western husbandry. The horse thrashers are still in use, but they are certainly doomed as the scythe or the hand rake. They are altogether too slow for this age. The steam thrasher is mounted upon wheels, and is drawn by horses from place to place, as it is wanted. The great advantage of the steam thrasher is that it puts the wheat harvest so much into the power of the farmer. As a rule, wheat stands in the shocks until it is thrashed, and the first good weather is availed of to clean the crop, and send it to market."
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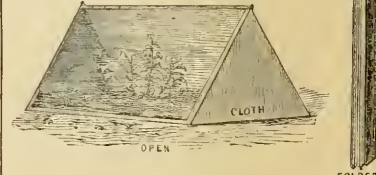
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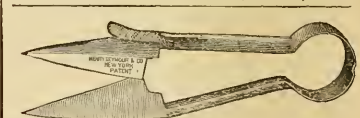
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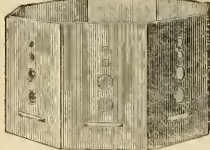
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VOLUME XXVII.—No. 3.

NEW YORK, MARCH, 1868.

NEW SERIES—No. 254.



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GROUP OF CASHMERE OR ANGORA GOATS. — Drawn and Engraved for the American Agriculturist.

Our artist presents us a picturesque group of these silky-haired claimants for public favor, exhibiting at once their fleeces and their propensities. Rocks that goats will not climb, foliage that they will not eat, bark that they will not gnaw, are things hard to find. Still, these propensities to overstep bounds, and do what we would rather they would not, may all be controlled, and their silky fleeces made available to the comfort and pleasure of man. We have been much interested in examining sam-

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AMERICAN AGRICULTURIST.

NEW-YORK, MARCH, 1868.

The coming of this month brings the renewed stir and activity of pressing work, or the preparation for work soon to be undertaken. March is a month of work from New England to Texas. The early part is usually the last of the winter, even in Maine, and over most of the Union farmers are hauling manure, plowing, setting fences, and engaged in other field work before its close. The winter has been a very cold one, up to the time of our going to press. Where much snow has lain, winter grains and fields newly laid down to grass will be benefited, but where the ground has been bare, the deep freezing of the soil, and the exposure of the plants to both cold and heat before it thaws, will be likely to injure both grain and grass, and render the application of some "hand manure" very desirable. After so severe a winter an early spring is anticipated. This is rejoiced in by most farmers, but it is accompanied by many more dangers to fruit trees and held crops than when the cold holds on, and the warm weather, coming later, is subject to few or no great fluctuations of temperature. Loamy or clayey soils should never be worked before they are so thoroughly dried as not to pack before the plow in pasty clods; and no seeds, except those of grass and clover sowed upon winter grain, should be committed to the soil before it is warm and mellow. The error of too early plowing is a common one; everybody wants to be at work in the spring, and no one really feels as if he had begun farming before he smells the fresh earth and sees the long furrows turned. So we get the manures spread and the plows at work, often enough when the plowman's feet are loaded with pounds of sticky clay, and water even stands in the furrows in the low spots. This is all wrong, for thus we burden ourselves with the care of rough, cloddy fields which will hardly get in good tilth before autumn.

Hints about Work.

The most important work any farmer does is to *Lay Plans* for the coming season. If possible think of every important thing, and keep a memorandum of whatever is deemed most essential, and the order in which it should come. In case of necessary absence, the foreman, or any intelligent hand, can go on with the work without any supervision, if a definite plan is made and talked over beforehand. The responsibility thus thrown upon an employee is a stimulus to faithfulness to which an intelligent man almost always responds. The circumstances of different farmers are so various that it is impossible to even hint at a plan of operations applicable to all. With many, a regular system of rotation of crops and manure leaves the principal work of the farmer all planned beforehand. Others decide in the autumn or summer previous, and others still delay until spring even the decision as to what fields to put under plow and where to put their manure. The aimless course is almost sure to bring delays and disappointments, which are readily ascribed to the weather. He who works with a steady aim attains the greater success with much less labor.

Animals.—The maintenance of animals in the stable or in the yards at any time of the year is unnatural, but if they have a great abundance of food and considerable range, the conditions surrounding them approach those they are subject to in the wild state. The amount of food animals exposed to the weather will eat is enormous, and even then they never come out in more than fair condition. We think every spring that it is almost absurd to reiterate our condemnation of farmers who expect, as a matter of course, to have their cattle "spring poor." This condition of a man's stock tells of exposure, lack of good food, and of very serious losses to the farmer himself—losses both of fodder wasted and of cattle injured in their productiveness for the rest of the year, or the rest of their lives.

Working Stock should be fitted for hard labor by increasing their grain and accustoming them gradually to severer demands upon their strength and endurance. Horses' shoulders are apt to gall, and oxen's necks will become sore, if they have done little work during the winter. Look out for such troubles, and bind on wet cloths at night, greasing the spots when the yoke or harness is again put on; but above all have well fitting yokes and harness.

Milk Cows.—Now is the time when rutabagas and mangels will tell on milk production. Cows coming in this month should have succulent food, if possible. Half a bushel, or even a peck, of roots will make a marked difference in the yield of milk, and soon after calving it will pay over and over again to feed oil-cake, from one to three quarts daily. Soak until all the lumps are broken up, and pour the gruel on cut corn stalks or hay.

Calves.—It is more humane, and better policy besides, to take away the calf, which is to be removed in a few days at farthest, as soon as it is dropped. The cow "takes on" less, and the calf does not mind the separation at all. It will learn to drink from a pail readily. Its diet at first must be its dam's new milk, and then any sweet milk; after the first week it may be changed gradually to skimmed milk with a little oil-milk gruel, or a thin porridge of wheat middlings mingled with it—the quantity of meal being increased as it grows, and that of milk lessened. Scours may usually be checked by a little scalded fine-flour porridge, and constipation by oil-mel. Young calves should be fed four times a day, dividing the periods equally between 5 or 6 o'clock in the morning and 9 or 10 at night. After a few days three times a day will be enough.

Sheep.—Examine the flocks carefully so as to be sure that each sheep gets its share of grain or roots. Give ewes near yearling pens where they are not crowded, littered with short straw, trodden firm. Early lambs are well worth extra care in raising. If found chilled they should be brought to the house and warmed at the fire, or by a warm bath and rubbing. A mild milk punch sometimes has an excellent effect.

Sows.—Breeding sows should be placed isolated, in warm, well littered pens several days before farrowing. Feed roots as a guard against constipation. Raw potatoes are excellent. Chareal dust with a portion of ashes is uniformly good, and by all means throw them a few fresh sods to root over and chew. A thorough carding is also beneficial, and if a man pets his pigs and really desires to have the young litters in the very best condition, he will do all he can to have the sows not only well fed but in the very best health.

The Currycomb, Card, and Brush, are among the best friends of the farmer and his stock, especially when the animals are shedding their coats. Every horse, young and old, should have good grooming daily, neat cattle twice, and hogs once a week. Carrots appear to have a remarkable effect upon the coats of cattle and horses. 4 quarts a day is enough, if fed with other roots, grain, bran, or oil-cake.

Buildings, the foundations of which have been disturbed by the frost, should be at once settled to their proper bearings. The present is a good season for outside painting and any repainting.

Manure.—That not intended for immediate use may be forked over and laid up in good-sized heaps, well trodden down, to undergo another fermentation before its use in May or later in the season. Manure that cannot be plowed under, harrowed in, or in some way immediately incorporated with the soil, should not be spread in the field, but left in heaps till it can be. Exposure of a day or two to the sun and wind is often a serious detriment. Top-dressings of animal manure upon grass or grain are of comparatively little avail in the spring. Ashes, plaster, fish manure, guano, bone-dust, etc., if purchased at reasonable rates, are economically applied at this season.

Pick up Stones.—As soon as the surface is thawed the stones will be loosened, and may be picked up and laid in heaps, or at once loaded into wagons or stone-boats, and removed. Many hands make light

work at this business, and half a dozen neighbors' boys may be hired to work for a few days and they will make fun of the job. Mowing land, newly plowed ground, and fields of winter grain, should certainly be gleaned over. A stone which is fast may often be loosened by being struck with another, and those which the boys cannot start will most of them yield to a few blows from a pick.

Farm Roads.—Lay out roads with reference to the future as well as the present wants of the farm. First drain the course, as well as tile drains can do it. This will generally be enough for most cart paths, but roads to be much used at all seasons need more. After draining, level the surface crossways, throwing off the top soil; then make a bed of stones, shallow on the tops of knolls and deeper in the swales and where water will be likely to wash. This will ease the grades, and, being made even and level, crossways, by the use of small stones, should be topped with gravel. Where stones and gravel cannot be had, branches of trees, cedars being especially good, may form the bed, first drained as directed, and covered with earth; this will make a very fair farm road, or even highway.

Fences.—When the ground is loosened by the frost coming out, and the land still too wet to plow, all hands may be set at fence making—resetting posts, renewing rails, staking, bracing, etc. The material needed, and that for new fence, should have been prepared from fall-out wood during the winter.

Soiling.—Rye will be the first crop ready to cut for soiling. It will respond quickly to a dressing of 100 or 200 pounds of Peruvian guano, which, if applied just after the frost leaves the ground, will probably not only add considerably to the crop, but will bring it on notably earlier. If cut so as to allow it to make a second growth, the top-dressing may be given at the time of cutting. Oats, sowed as early as the ground is fit, at the rate of 4 bushels to the acre, are regarded as the best crop to follow fall-sown grains.

Field Work.—Clover and grass seed may be sown on the winter grain. Grain and grass fields may be rolled as soon as the frost is out, thus resetting the roots laid bare by the action of frost and wind, and sinking the small stones. Plowing and harrowing may be done when the ground is dry enough. Potatoes may be planted on warm, early land, using good-sized seed not cut small, and if cut at all left some days to "heal" before planting.

Spring Grains.—It is generally best, north of lat. 40°, to sow in April, but where the ground is warm, and can be thoroughly prepared beforehand, it is well to get all kinds, even peas, in as early as possible. Peas and Oats sown together are an excellent crop for feeding green, or for cutting and curing before ripe enough to shell, to be fed in the straw, or when ripe, to be thrashed, and ground together for feed. It is off early enough to prepare for wheat.

Work for old times.—The weather and other things will cause unavoidable delays, but few compared with those coming from our own improvidence or thoughtlessness. Always have work for old times: clear up around the house and barn; work over manure; prepare composts of hen-manure or privy soil for corn, or for top-dressing grain or grass; collect chip dirt where old wood-piles have stood; make ditches to spread the wash of high-ways over the grass; get out pea brush and bean poles, trimming and sharpening them ready for use; and clean out the well and cistern, if necessary.

Prepare for a good Garden. which should be the pride of every farm. Read the hints under Kitchen Garden, and if there is a probability that it will be well looked to, make a hot-bed, and sow lettuce, radishes, early cabbages and cauliflowers, peppers, tomatoes and egg plants. Cucumbers, melons, and squashes, started on pieces of sod, may be removed to the open ground when danger from frost is past.

Hints about Work in Previous Volumes and Numbers will well repay perusal. Especial care is taken not to repeat, except when it is unavoidable. In the previous numbers of the current year subjects touched upon or discussed one month are often quite as appropriately considered in another.

Work in the Horticultural Department.

As we look out upon the snow banks it requires a little faith to put ourselves in a frame of mind to talk about out-door work. With us this has thus far been a grand winter for dormant plants; snow, the best of all mulches, has kept them thus far as well covered as the most careful gardener could wish. Some of our friends in the far southern States write us that our notes are not timely for them. We are well aware of that; neither are they exactly in time for northern Maine and New Hampshire, and are further out of the way for California than for either. It is not practicable to make a calendar that may be followed everywhere, nor even one that will suit a single locality in all seasons.

We long ago discontinued calling these columns a calendar, for the reason that it conveyed a wrong idea. They are intended to be a series of reasonable hints about work, and among other things, condense here in brief what we have not space for in another form.

The time for performing the different operations is well known to those with experience. To the novice we would say, do not be in too great a hurry; after the frost has gone the ground must drain and dry and get in working order. Set out all hardy trees, shrubs, and plants, as soon as the soil can be made fit to receive them. Sow seeds of hardy vegetables, peas, turnips, carrots, cabbage, etc., as soon as the frost is out and the ground can be worked. For tender plants, such as squashes, melons, tomatoes, etc., the time for corn planting, well established in every locality, is the safest guide.

Orchard and Nursery.

One of the first things to be done is to care for *Girdled Trees*, which should be attended to as soon as the injury is discovered. Last month in the "Hints," as well as in the "Basket" on page 48, we gave the manner of treating them.

Order Trees from the nursery at once, if it has not been done. If planting with a view to selling fruit, have a few kinds that are known to succeed in the locality, rather than many but little known ones.

Plant as soon as the soil can be thoroughly prepared. See hints on laying out an orchard, on page 102. If not ready to set the trees as soon as they arrive, unpack and

heel-in at once, taking care to put the different kinds so that there will be no confusion of names.

Pruning at Planting, and indeed pruning at all, has been much discussed of late, but we have seen nothing to convince us that it is not both advisable and necessary. Cut back at least one-third of the branches of the tree before setting.

Deep Planting is injurious; the tree should be set no lower than it stood in the nursery, allowing for the settling of the newly disturbed soil.

Grafting is not to be done until the buds upon the stock show signs of starting; the cherry and plum should both be grafted very early.

See notes of January and February for other work which may yet be done, especially the instructions in regard to the destruction of insects.

Fruit Garden.

Planting of all kinds is to be done as soon as the soil is in good working order.

Grape Vines that were not pruned last fall should be attended to. In planting young vines cut them back to two or three buds, and then allow but one of these to grow the first year. Much of the failure with grapes is due to planting a long vine and allowing it to grow as it pleases.

Grape Cuttings are best kept out of the soil until it gets thoroughly warmed to some depth.

Current Cuttings, as well as those of the Gooseberry, are to be planted as soon as the ground is ready. In setting these, as well as other cuttings, have the earth well packed around their lower ends, even rammed down firm against them.

Current and Gooseberry Bushes should be trans-

planted as early as the weather will allow, as should

Blackberries and Raspberries; these should be cut back and the growth started from buds at or near the root. If the canes are not cut back some fruit will be borne the present year at the expense of the future welfare of the plants. At the West these fruits are grown in hedges; the plants are set two or three feet apart in the row, and when the Raspberries are a foot high, and the Blackberries two feet, the shoot is pinched, and the side shoots are pinched when they are a foot long. It is said that in this way a very large crop of fruit is obtained, and the plants become self-supporting.

Strawberries.—Set as early as the plants can be had; one foot by 18 inches, or two feet for the large-growing sorts, is the usual distance for garden culture.

Trees in the garden will need the general care indicated in this and previous months under "Orchard."

Kitchen Garden.

If the preparatory work is not well along it will not be because we have not given frequent injunctions to collect manure, procure seeds, repair tools, and consider all the ways and means beforehand.

Preparing the Soil should be done at the earliest practicable moment, but not until it is sufficiently dry. In properly drained gardens the work can be done much earlier than in others. Deep plowing and subsoiling are best for a garden large enough to allow this kind of work. It is advisable to have no trees or bushes in a kitchen garden, or, if they must be there, let them as well as such permanent plants as Rhubarb, Asparagus, etc., be so placed as not to interfere with the free and frequent working of the portion devoted to vegetables. In small gardens deep spading must be resorted to.

Hot-beds are to be made and the seeds sown. It is much more economical of heating material to place it in an excavation; dig a trench 2 feet deep and of convenient size for the sash on hand, drive down stakes and board up the sides of the pit, the boards at the rear being 18 inches and those at the front, (facing the south) 12 inches above the surface; provide cleats extending from side to side for the sashes to run upon, and board up the ends. Fill the trench with fermenting manure, distributing it evenly and beating it down with a fork, or use one-third or more leaves with the manure. Put on 6 inches of rich, light soil and place on the sashes. The bed will become very hot, and when the heat declines below 100° the seeds may be sown. Sow Tomatoes, Peppers, Egg Plants, Early Cabbages, etc., in rows crosswise of the bed and about 4 inches apart. Cover small seeds very lightly.

Cold Frames are much safer for the inexperienced than hot-beds. Place a frame over a well-prepared spot of light, rich soil, put on the sash, and at night cover the sash with mats or shutters. In a few days the soil will become well warmed, when the seeds may be sown the same as in a hot-bed.

Hot-beds and Water must be properly given in either hot-beds or cold frames. The water should have the chill removed and be applied from a fine sprinkler. Give air every day when not too cold.

Planting on Sods.—We have often recommended this simple but useful contrivance, but it may be new to some. Get a good bit of pasture sod, and lay it on a board, grass side down; then with a knife cut it into pieces about three inches square. In the earth of these sods the seeds of any of those plants that are not easily transplanted may be sown. Place the whole in a hot-bed or cold frame. Cucumbers and melons seem to delight in this treatment. At the proper time the sods are planted out without disturbing the roots of the plants. It is well to put a half dozen seeds in each, and thin out to two or three. Some hills of early corn and even potatoes, may be had in this way.

Plants in the house may be started in common boxes, or according to hints on page 100.

Cabbage Plants and others that have been wintered in frames must be freely exposed, and generally the sashes may be removed altogether.

Asparagus is to have the litter removed and some

good manure carefully forked into the beds; give a dressing of salt. Sow the seeds early for new plants in rows a foot apart, and make new beds.

Rhubarb needs the same treatment, except the salt; divide old roots and make new beds, setting the portions of root, with a bud in each, 3 or 4 feet apart each way, according to the size of the variety.

Sow Seeds of Beets, Carrots, Spinach, Salsify, Onions, Leek and early Turnips in rows 15 inches apart and Cress and Lettuce in rows a foot apart.

Raidishes may be grown by themselves in rows a foot apart, or be sown between the rows of beets.

Pas.—Sow some of the early sorts, putting the seeds 3 or 4 inches deep. Dwarfs take little room.

Potatoes.—Plant Early Goodrich or some other good early sorts. See Seed List in "Basket."

Onions.—Sets and potato and top onions are to be planted early, 4 or 5 in. apart in rows a foot apart.

Parsnips and **Salsify** that have remained in the ground over winter should be dug before they grow.

At the South in most localities the tender vegetables may be sown, such as Sweet Corn, Beans, Okra and crops for succession of all the hardier varieties, and Sweet Potatoes may be planted.

Flower Garden and Lawn.—The heavy work of preparing the soil, etc., should be pushed along whenever the weather will allow.

Roads and Paths should be thoroughly done; provide for good drainage and a solid road-bed.

Lawns are too often slighted; as with roads, the best part of the work is out of sight. Deep working, draining, manuring, and levelling, are all requisite to a good lawn. Sow June Grass or Red-top.

Trees of all deciduous kinds may be transplanted. **Hardy Shrubs** are to be transplanted; clumps of these often grow so dense as to need thinning out.

Tender Shrubs, that have been protected during the winter, should not have the covering material removed before the weather becomes settled. The alternation of warm days and cold nights that occurs in spring is often more injurious to such plants, than the continued cold of winter.

Uncover beds of bulbs, but have a little litter handy to throw over them in case of sudden cold.

Perennials of most kinds that have been 3 or 4 years in a spot do the better for dividing and replanting. See "Everybody's Flowers" on page 101.

Hardy Annuals may be sown as soon as the frost is out, and tender ones started in boxes. See p. 103.

Green and Hot-Houses.—The sun will now do a good part of the heating, and milder weather will allow of freer ventilation.

Propagate a good stock of plants for out-of-door uses. Our large propagators of verbenas and similar bedding plants use very small cuttings of tender and succulent growth. The temperature of the sand in the cutting trench should be from 65° to 75°, and that of the house from 10° to 15° lower.

Insects must be kept down by frequent fumigation with tobacco smoke. A recent writer recommends as a safe way to fumigate frames, to heat a convenient bit of iron to redness, put this in the bottom of a flower-pot, lay a few bits of broken crock over it and put in the tobacco and let it smoulder.

Bulbs for early blooming, may be potted and gradually started into growth. This is the only way to be sure of early Tuberoses, and Lilies may be had in flower much earlier by the same method.

Camellias and such shrubs as are starting their new growth may be pruned. The Camellia may be pruned freely and made to grow in a handsome shape instead of the usual lanky scraggy ones.

Forcing may be done with the Dentzia, and other plants that were potted in autumn for this purpose.

Fuchsias, if not already started, should be brought into a warm place, and be given water. Propagate by cuttings from the young growth. Fuchsias are showy in the border, if not too much exposed to sun.

Cold Grapery.—At the North it is not advisable to start the vines before April, as there is now a fear of the growth being checked by a continued cold spell. Keep the temperature of the house as low as possible by freely opening the doors and ventilators, but avoid sudden changes.

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NOBODY

need stop working for premiums, for weeks to come. In past years, many persons have found MARCH the best month in the year to secure subscribers and obtain good premium articles. We have usually sent out more premiums during March and April than in any other month. Those who have hesitated previously, now come to the decision to "TRY THE PAPER FOR A YEAR." The approach of active work in the Field, in the Garden, and around the House, wakes up people to the importance of obtaining all the aid, the hints, and suggestions they can from such a journal as this. The person who most frequently

FAILS

to secure the best return for his labor, is the one who toils with his muscles only, or mainly—the one who despises all "hook farmin'," and keeps down as nearly as possible on a mental level with the ox before his plow. What is this "hook farmin'?" which he despises? Why, simply this: A few men act as storekeepers for the great mass of cultivators. They receive and also collect new ideas, hints, and suggestions, about all kinds of work, the best modes of labor, the best implements, the best and most profitable crops, fruit, etc. These are gathered from a wide field, sorted and arranged, and the best selections that can be made are multiplied indefinitely and sent out

TO

every one contributing a small subscription to the general expense. Who would not give a dollar-and-a-half, or a quarter of a cent apiece, to have six hundred fellow-workers call upon him during the year, and each drop a single hint about how he himself manages his work, or how he would advise to do it; what crops he finds best, how he turns them to the most profitable account, and so on.

With six hundred such calls, could any man fail to gather some hints, or have his thoughts turned into some new direction, which would benefit him ten times, or a hundred times the value of a dollar-and-a-half? Well, the *Agriculturist* collects and brings to one's bedside, out of work hours, just such hints and suggestions as he would

GET

from the personal calls of far more than six hundred fellow-workers. Thousands of persons have actually testified that single hints have benefited them hundreds of dollars. Thousands of others would testify the same thing, if called upon. Tens of thousands of others have been benefited by the quickening of thought they have received from reading, without particularly noticing the mental process. Thinking, reading men, as a class, more successful, more elevated above the brutes, and more happy in their daily work. Those who have not been used to reading about their own business, do not know what they are losing. It is a good, a benevolent work, to persuade them to seek information—to set them to reading and thinking more. Aside from any profit or credit of having a large circulation, we enjoy seeing the number of reading people increased among cultivators.

PREMIUMS

are offered to stimulate our friends to active exertion in hunting up the non-reading people, and urging them to read about their work. Not one in fifty of the cultivators of our country takes and reads any journal devoted to his own business. They read news or political papers, which is all very well,—novels and exciting stories, which is not so well,—but scorn "hook farming," or anything, if in

print, that aims to help them work better and more profitably, and to increase their physical comfort. Every person led to read and think more, becomes a better man, more prosperous, and happier, when following the plow or wielding other implements. He becomes more intelligent, and far more contented. We desire

THIS MONTH

to have our readers put forth every possible effort to largely increase the circle of reading, thinking men, women and children all over the country. Politics will rage this year, as never before, but while acting our parts as citizens, let us have the general undertone of improvement going on in all that pertains to the Farm, Garden, and Household. We believe every good citizen will delight to take part in this work for its own sake; yet we very gladly give the good premium articles, such as are noted in the table below, to all who will take part in it. Every one who solicits subscribers to this journal will thus get doubly paid—in the satisfaction of doing a good work, and in the premiums received.

Twenty-six Hundred Persons

on our premium books have lists partially completed. These various lists may all be filled up during March.

Twenty-six Hundred Persons

more, at least, may yet begin and complete new lists, and secure good premiums before the offers close this year.

Try it, Friends.—Try it this month, this week. Even should you not ask or secure a premium, every person you persuade to read will be benefited, and you will, in a few years, receive his thanks, and see him happier.

Table of Premiums and Terms, For Volume 27—(1893).

Open to all—No Competition.

No.	Names of Premium Articles.	Price of Premiums.	Number of Subscribers required to get \$1.50 or \$1.
1	Garden Seeds for a Family (40 kinds)	\$5.00	15 37
2	Flower Seeds for a Family (100 kinds)	\$5.00	15 37
3	Variegated Stock (Any kind desired)	\$5.00	30 97
4	Iron Grate Vase (12 or No. 1)	\$5.00	30 97
5	Concord Grape Vines (100 of No. 1)	\$12.00	19 67
6	Japan Lilies (12 Double)	\$5.00	15 37
7	Sewing Machine (Grover & Baker)	\$5.00	60 210
8	Sewing Machine (Horse Machine Co.)	\$5.00	60 210
9	Sewing Machine (Singer's Tutoring)	\$5.00	60 210
10	Sewing Machine (Fisher)	\$5.00	70 270
11	Sewing Machine (Willcox & Gibbs)	\$5.00	60 210
12	Sewing Machine (Eaton)	\$5.00	60 210
13	Sewing Machine (Wheeler & Wilson)	\$5.00	60 210
14	Washing Machine (Doyle)	\$14.00	21 70
15	Washing Machine (Eaton)	\$10.00	15 37
16	Tea Set (Hart's Best Silver Plated)	\$50.00	66 235
17	Croquet and Fruit Basket (do.)	\$5.00	44 160
18	Ice or Water Pitcher (do.)	\$18.00	21 70
19	One Dozen Tea Spoons (do.)	\$6.00	15 37
20	One Dozen Dining Forks (do.)	\$6.00	15 37
21	One Dozen Dining Forks (do.)	\$12.00	19 67
22	Tea Knives and Forks (Patterson Bros.)	\$20.00	30 97
23	Tea Knives and Forks (do.)	\$10.00	15 37
24	Carving Knife and Fork (do.)	\$8.50	17 50
25	Medical Bag (Shell Case)	\$15.00	22 75
26	Medical Set (Shell Case)	\$15.00	22 75
27	Medical Set (Shell Case)	\$15.00	22 75
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85	Medical Set (Shell Case)	\$15.00	22 75
86	Medical Set (Shell Case)	\$15.00	22 75

exceptions one-quarter of the whole were only what may be rated as first quality; one-half, second quality; and the rest poorly fattened oxen and dry cows which sold low to packers and contractors. Much of this "scallawag" beef, it is said, goes to the city charitable institutions, and of course at a high price for such stuff. It would be strange if a market like New York in a term of five weeks did not present some prime animals. Those worthy of special notice were a lot of 10 grade Durhams from Michigan, very heavy and fat; they were too large for retail trade and found a slow market. They were, however, sold at the close of their second day in the market to one of our "fancy butchers" at 20c. per lb., on the actual weight of the dressed quarters. Two steers, also grade Durhams, one of them raised and fattened by the wife of a noted cattle broker, sold for 20c. per lb., or about \$700 for the two; they were really fine animals. A lot of Ayrshires deserve mention because of their great beauty; they were round and plump, dark red, with clean white faces; would dress about 100; cwt. and sold for 14c. per lb. It was considered a good bargain by both parties. The "tops" of each drove, as a general thing, found a ready market at above-quoted prices; while the coarse steers, half-fat oxen and cows found a dull, low market, often remaining over until next day. In January, owing to heavy snow which made transportation uncertain, the yards were filled with poor State cattle, which, in the lack of better stock, sold for more than good stock steers would bring in February. Therefore, with a better market to choose from, and a steady falling off in price, there has been a decline of at least 12¢ to 20¢ per pound since our last report, for the same quality of beef....**Milch Cows.** These have come to market in numbers equal to the wants of buyers. They usually sold in small lots to city milkmen. State "springers," in good order, brought from \$70 to \$80. Good young cows with calves, from \$80 to \$100. Extra milkers, mostly grades of Ayrshire or Jersey, sold for \$120 to \$150 each. Good cows, however, have been scarce, and but few have come to market. Most of the stock, being second quality, sold slowly at from \$35 to \$70; while some poor cows sold as low as \$10. The supply for the week ending Feb. 13th was much greater than the demand, and many remained over to next week....**Calves.** Veal has been in good demand all the month, and anything in market goes off rapidly at a fair price. Live calves may be quoted from 9c. to 12c. for the animals. A few fat, good-sized extras brought 12c. to 13c. Many have come in dressed without removing the skin. Such "hog-dressed" calves sold for from 12c. to 14c., according to age and quality. There have been fewer in market for the past two weeks, and prices range about 1c. higher than in January....**Sheep.** Prices range from 7c. to 9c. for extra lots. Some few prime lots, very fat, brought 9c.; while the lightest ones sold for 5c. to 6c. per pound. The market has been lively all the month, all qualities finding a ready sale. One lot of 115 head, sold on Feb. 10th, for 9c., are worthy special notice. They were native sheep fed in New Jersey, and averaged 139 pounds each. The pelts from such sheep now sell for about \$2.50 each. One butcher, not finding what he wanted in market, went to Litchfield Co., Conn., and bought some Cotswolds of very large size. He gave 10c. per pound, or about \$20 a head, the sheep averaging 200 pounds each. The increased arrivals for the week ending Feb. 13th so far exceed the demand as to make the market a little dull, and a slight falling off in price for medium lots is the result. The demand, however, is large, and mutton is in request, while beef keeps up to its present high figure....**Swine.** There has been a gradual falling off in numbers, as will be seen by the figures given above, with a gradual upward trend in price. Live hogs had a ready sale at from 7c. to 8c. per lb., while with the light supply for the week ending Feb. 13th, some sales reached as high as 8c. per lb. Western dressed have come in largely during the cold weather, and sell for from 9c. to 10c.; while city dressed bring 10c. to 10c. These quotations are very high, and many packers have stopped operations until there is a falling off in price. They confidently believe the high price will not continue long.

New York State Agricultural Society—Officers for 1868.—At the Annual Meeting, held in Albany, Feb. 12th and 13th, the following officers were elected for one year:—*President*, THOMAS H. FAIR, of New York. *Two Presidents*, for Judicial Districts, 1st, John Haven, of New York; 2nd, Samuel Thorne, of Dutchess; 3d, Adin Thayer, Jr., of Rensselaer; 4th, Milo Hughes, of Washington; 5th, Harris Lewis, of Herkimer; 6th, W. M. Ely, of Broome; 7th, H. Ten Eyck Foster, of Seneca; 8th, George A. Moore, of Erie. *Cor. Secretary*, Benj. P. Johnson, of Albany. *Recording Secretary*, Thos. L. Harrison, of St. Lawrence Co. *Treasurer*, Luther H. Tucker, of Albany. *Executive Committee*, chosen at large, Samuel T. Taber, of Queens; J. D. Wing, of New York; Wm. M. Burr, of Madison; A. B. Cornell, of Tompkins; James Geddes, of Onondaga; J. D. Mitchell, of Monroe;

B. F. Angel, of Livingston; Richard Church, of Alleghany. (It is understood that the Recording Secretary, Mr. Harrison, will hereafter assist the Corresponding Secretary in the labors of his office, as may be needed.) The question of the location of the next Fair was discussed, and strong claims put in for Rochester and Utica; the decision was referred to the Executive Committee. Further editorial reports of the Annual Meeting reach us too late for the present number.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

How to Remit—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the *Registry Fee*, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money and send the letter in the presence of the postmaster, and take his receipt for it. Letters sent in this way to us are at our risk.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be pre-paid at the Post-office where the paper is received.

SPECIAL REQUEST.—On page 84, the Publishers have partially set forth the advantages of reading. They are ambitious to reach and beneficially influence as large a circle as possible. To help on the enterprise, we invite all our readers who do not try for the prizes, to favor us with their good words and acts. Suppose each present reader induce at least one more to become a reader during this month. It can be done readily, except in certain towns where every person already takes this journal. While we shall appreciate the response to this request, we feel sure that every additional reader secured will be benefited.

"Please Answer in the Paper" is a request a thousand times made—often by those who omit their address. Our space is too valuable, by far, to write personal letters in. As a rule, only topics interesting to a good many persons can be alluded to in type. Subjects or questions of interest to only one or two persons are answered by letter, when we have time.

Advertisements Earlier, if You Please.—It is necessary that all advertisements be received at this office before the 5th of the month. Three pages received later are left out for want of room, although four extra pages were added to accommodate our customers. Had these been sent a few days earlier, we could have made calculations by which all might have appeared.

In the "Ring."—The Kansas friend whose letter was unanswered, hopes that it is not the case with us, as with the Farmers' Club, that it is necessary to be "in the ring" to be noticed. We cannot answer for the Farmers' Club, but for ourselves we can say that we do not know personally one in a thousand of those to whom we reply. We try to treat all alike, and if any feel that they are neglected, it is from no personal reason, but solely because we have not space for everything that we would like to publish.

The Cornell University.—The "First General Announcement" of the Cornell University informs us that it will be opened on the last Wednesday in September next; examination of candidates for admission to take place on the Monday and Tuesday preceding. The Departments are to be those of Agriculture, the Mechanic Arts, Civil Engineering, Military Engineering and Tactics, Mining and Practical Geology, and History, Social, and Political Science. We cannot give

space to a general sketch of the plan of instruction; those who are interested in this, as well as in the terms of admission, should apply for a copy of the Announcement to Francis M. Finch, Secretary, Ithaca, N. Y.

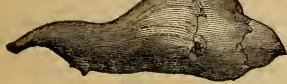
A New Standard Agricultural Work.—We are gratified to be able now to announce a work in press, by Prof. S. W. Johnson, of Yale College, to which the best labors of many years have been devoted. It treats of the relations of the Plant to the Air, of the Plant to the Soil, and of the Philosophy of Farming in general—Manuring, Feeding, etc. There are very few men in the world who can bring to the labor of preparing such a work greater erudition, better practical views, plainer common-sense, or sounder reasoning. Professor Johnson was bred upon a good farm, on the edge of an almost unbroken wilderness, and has a knowledge of nature in her primordial wildness, and of the most "intensive" culture in Europe. A familiarity with European languages, thorough chemical knowledge, great thoroughness, patience, and perseverance, and unusual aptness for teaching, make him just the man for so arduous an undertaking. The work, so far as we have perused the manuscript, is simply written, clear, explicit, and full of facts; it cites authorities freely, and is thorough, progressive—leading the reader from step to step to clear an understanding of agricultural phenomena as has yet been arrived at. The work will be adapted to the use of the general reader, and to be used as a text-book in agricultural and other schools and colleges. It will be published in the course of the season.

What is the Matter with the Mule Team?—The picture on the front page of the February number has caused a great deal of fun and some perplexity to many of the readers of the *Agriculturist*. We can easily imagine the indignation of Scipio Africanus at being represented astride of the old mule, and the "guffaw" of the old army teamster as his quick eye sees what is the matter. We admit also that the mules would feel very uncomfortably and would be hard to keep in the road if they were hitched up and driven in this way. We sincerely hope that neither ourselves nor our artists may again be chagrined at finding, when too late to remedy it, that a drawing had not been reversed when put upon the block. Few persons not familiar with the processes of printing and engraving are aware how the drawings and engravings, as well as the type, look. The drawings appear exactly as the pictures after they are printed do, when seen in a looking-glass. If our friends will hold up the mule picture to a mirror, the driver will be on the right, that is the left or right mule, and all will be correct. The action of the white lead mule is perfectly correct.

Sundry Humbugs.—Please stop sending us money to pay the "5 per cent. cash assessments" on prizes pretended to have been drawn for sundry people by A. A. Kelly, by Clark, Webster & Co., and others of their ilk. (These very kind men draw grand prizes for all their customers. Of course they take all the blanks themselves—generous rich men that they are.) Enough cash to constitute a small fortune has been sent us thus, this year. We have returned all such money to the senders without charge, but if it keeps coming we shall have to deduct a "5 per cent. cash assessment" to pay for time, clerk hire, and postage, to say nothing of the risk of being considered swindlers ourselves, if the money chanced to miscarry in coming and going. We repeat that all these proposed "prizes" are humbugs. The "\$150 prize" is a so-called certificate for 150 shares in a bogus company, and so of the "\$100," and of other prizes. They are not worth a farthing—not one of them,—and every dollar forwarded is an absolute loss to the sender....The "Gettysburg Asylum Scheme" continues to be advertised—to the profit of the operators and the newspapers. Consistency must be at a discount, when leading journals act like the Daily Tribune of Feb. 6, which in its editorial columns warns the people against this scheme, yet in the same paper publishes a displayed advertisement of the Gettysburg Concert, so called. We dislike to appear to oppose anything even professing to aid our noble soldiers who have become crippled or invalids in their country's service, but such schemes as this Gettysburg affair will in the end do them more harm than good. We have followed our soldiers to the battle field, and when sick and wounded have nursed them night and day in the hospital tents, in the field, and in the woods, for weary weeks and months, and we will gladly contribute farther to furnish homes for them, but we prefer to have them receive the full dollars contributed, and not a cent or two on each dollar, if they get anything of the sum solicited by the Gift Enterprise men. It is high time that all these sympathy-pleading concerns received their quints. Let a bona fide enterprise be started to aid the soldiers, by well-known, reliable men, let it be devoid of all clap trap of enormously over-estimated farms, unsalable jewels, old books and boats, etc., and tenfold more actual money will be received, than will ever come from

the best of these lottery and gift schemes, if we can apply the term *best* to things wholly bad.... Our letters this month contain circulars of thirteen different Lottery and Gift enterprises, of eleven different watch and jewelry ticket schemes, all swindles, and of twelve miscellaneous hamburgs, such as honey recipes, oil manufacturers, washing compounds, sewing machines vile publications and instruments, etc.—in all, just three dozen swindling schemes, the operators of each of which are paying large sums for postage and circulars, for which they are reimbursed by the simple-minded, trusting people.... *Beach, Stephens & Co.* is a new name in the great promise-notting returned-swindling-army, but is a revamp of an old concern.... *Sean*, of Manchester, N. H., is one of the most "cheeky" swindlers we have lately met, though he has several near relatives in this city.... Manning's un-natural joint stock affair at Milford, is like all of its class, nothing but a humbug.... A. P. Bussery, formerly of N. Y., east, and now in control N. Y., is so greedy of money that he will even murder if paid a small consideration, and has the impudence to argue in favor of lessening the human race. Pity he and a dozen of his class had only one neck, and the hangman a rope around that neck. We would, for once at least, vote for capital punishment for murderers, despite the interposition of Mr. Greeley.... Since the above was written, the Pennsylvania Legislature has repealed the act by which it has hitherto been indirectly upholding the Gettysburg Asylum Scheme.

The Jerusalem Artichoke.—Mrs. A. N., of Rome, Ga., writes: "I would say a word in favor of the Jerusalem Artichoke. I don't know how it would compare with the food of northern cattle; but here, where the great obstacle in keeping a cow is the difficulty of procuring food, I am convinced it would be a most profitable crop. We only have ground enough to supply our own table, but I always take care to let an artichoke grow in every spare corner, and treat my cow to a bucketful as often as possible. Our soil is not what you would call rich—rather the reverse, but I can always



THE JERUSALEM ARTICHOKE.

take a peck bucket full, sometimes more, from a single plant. They need to stand singly, and two or three feet apart; a cow will eat them raw with avidity, and if they are boiled, mashed, and a little bran, or meal and salt, added, she will scarcely stop for breath till all is gone, and will increase her milk at least a third. As there are few days here that a spade cannot be put into the ground, they need only be taken up as wanted. Another advantage is, they are up with the first breath of spring and you can cut an armful of tender tops for the cow before she can find much other green food, and which she will eat with a relish worth witnessing; even the old leaves they eat in preference to almost anything else in the garden. All the cultivation needed is to keep them from getting too thick; they grow so fast few weeds can contend with them. I think if you could induce every one, at least in the South, that owns a lot of ground and a cow, to plant a good lot of them, they would be very much obliged to you."

Make the Most of Your Land.—Gardening for Profit, by Peter Henderson, is not solely devoted to market gardening, but it tells how to treat a garden of any size in a manner to get the most from the space. No book of the kind has given such general satisfaction. Price \$1.50 by mail.

A New Publishing House, that of Messrs. J. B. Ford & Co., 149 Grand St., has been recently organized in this city. Mr. Ford has been for many years connected with the trade—the past eleven years as manager of the Subscription Department of the Appletons, including the Cyclopaedia, etc. One of the first works to be issued by the new firm will be a Life of Christ, by Rev. Henry Ward Beecher.

Knox's Fruit Farm.—The catalogue of Mr. Knox grows each year more portly, and is full of good things. The sending of plants by mail has long been one of the features of this establishment. We are glad to see that he gives due prominence to that much neglected fruit, the currant. That he is eloquent on the Junonia, we need not say, and he makes liberal offers to send it with the *Agriculturist* and other papers.

The Word "Muck."—"Will you oblige a reader by explaining what you mean by the word 'muck'?"—Webster defines muck as "Dung in a moist state, — A mass of decaying vegetable matter," etc.

Worcester says: "A substance, as dung or straw, that is moist or in a fermenting state,—Manure." Swamp muck is a substance familiar to most of our readers. To this substance Webster's second definition is substantially appropriate. "Muck" is applied in the common usage of farmers and gardeners of this country to the decomposing vegetable matter of swamps, including substances of different kinds as peat, rotten leaves, and even the deposits in old mill-ponds, if chiefly vegetable.

Chicken Feed.—"P. T.," Connecticut. We know of nothing better for young chickens and turkeys than hard boiled eggs chopped fine, and fed with cracked corn and wheat. The first few weeks is the most critical time with them, and they need animal food in some form, especially in the early spring, before grubs and insects are plenty. We have fed raw liver, chopped fine, with advantage. A change of food is desirable. Wheat or barley steeped in milk, toasted bread crumbs, and hominy, are excellent. They should be fed as often as five times a day, until they are a month old, and should have access to clean water at all times.

Do You Want to Know?—We are obliged to lump answers to a large number of correspondents in this manner. Do you want to know where to get Seeds and Implements? Consult the advertisements; the large dealers usually keep all kinds of seeds and implements. Do you wish to know all about Hops, Flax, Onions or Tobacco? Get our treatises on these subjects. Do you wish a handy Poultry Book? Get Saunders Domestic Poultry. For condensed directions for Drainage see our Agricultural Annual for 1891, and for the best account of Cheese Factories, that for 1893. If you wish to know about new plants, fruits, and vegetables, see the Horticultural Annual. Both these Annals are full of good things.

Vitality of Seeds.—S. A. Greco asks as to the length of time garden seeds will retain their vitality. We can only answer in a general way, as the duration of the germinative power depends very much on the care with which they have been kept. The following is Peter Henderson's arrangement. Onions, Parsnips, and Leeks, should be of the previous season's growth. Good for two years, Beans, Peas, Carrots, Egg Plant, Okra, Salsify, Sweet Herbs; for three years, Asparagus, Endive, Lettuce, Parsley, Spinach and Radish. Those safe for four years, Cabbage, Cauliflower, Celery, and Turnip; from five to ten years, Beets, Cucumber, Melons, Pumpkins, Squash and Tomato.

Peanut Culture.—Several Inquirers. The Peanut needs a light mellow and rather fertile soil. Some throw up ridges as for sweet potatoes, but they are quite as often grown in flat culture. The rows or ridges are laid off three or four feet apart, (the plant spreads a good deal), and the seeds, with the husk removed, are planted two in a place at distances of a foot in the row. When the plants are up, this to one in a place, and supply missing ones by transplanting. The after culture consists in keeping the weeds down and the ground mellow. Do not plant until the ground is warm.

Cranberry Culture.—We answer many inquiries together. 1. We have no evidence that the cultivation of cranberries on upland has been successful on a large scale, though small garden plots have done well. 2. A peat bog or meadow, that can be drained and can be flooded at will, is the most suitable place for a plantation. The bog is drained by deep ditches and an embankment is made to keep the water out, with floodgates for letting it on when necessary. The land is cleared of brush and tussocks, levelled, and covered with 4 to 6 inches of sand, free from loam or clay. In some localities the ground is naturally sandy and this is not required. When the land can be plowed and harrowed it is so treated. Some prefer to prepare the land thoroughly one season and plant the next; the object being to get rid of all the native weeds and grass as thoroughly as possible. 3. Planting is done in the spring, the plants being set from 18 inches to three feet apart. 4. Plants may be had of dealers who advertise them, or they may be taken from wild beds if they are known to be productive. 5. Cultivation is needed through the summer until the plants cover the ground and choke out the weeds. 6. Fuller's Small Fruit Culturist has a chapter on the Cranberry, and there is a special treatise on the subject by Eastwood.

Root-grafted Trees.—R. Reeves. This is a subject upon which good pomologists differ. This plan of propagation has been openly condemned by at least one agricultural society, while, on the other hand, so good an observer as Warder says: "The theoretical objections to root grafts have yielded to sound philosophy, based on, and supported by, practical observation." For ourselves, we should be satisfied with a thrifty, well-rip-

ened tree, with a well-grown root, no matter how it was produced. Many poor root-grafted trees are sent out; this is not the fault of the method, but of the propagator. The cause of the death of young trees is still obscure.

Sprinkling Jet for Hose Pipe.

Where water is thrown from the common perforated rose jet a difficulty is often found from the filling up of the holes with specks from the water. This is obviated by the contrivance figured. The affair is made of tin or sheet brass. It consists of a tube, slightly conical, 3 or 4



inches long, to slip over the nozzle; to this is soldered, at a slight angle, a triangular piece, one corner being made to embrace the tube at the end. The two sides are bent up to prevent the stream of water from spreading too much. The slight angle at which it is placed causes the stream to strike it near the nozzle, and spread out in a fan shape, while the edge or lip over which the water is spread is also turned up a little to more effectually open the sheet of water. It is easily made by any tinner, and for most uses is superior to the rose jet.

\$300 Wheat Prizes.—Interesting to Wheat Growers in the United States and Western New York.

At the suggestion of wheat growers in Western New York, who desired to have special attention called to this subject at the Annual Meeting of the N. Y. State Agricultural Society, Feb. 14th, Mr. Judd, of the *American Agriculturist*, brought the matter before the Executive Committee, and placed \$300 at their disposal for prizes. The Committee accepted the offer with a vote of thanks, and they will announce the prizes for the next Annual Fair, probably in the form below, with perhaps slight variations that may be suggested while making out the official premium list. We call attention to the subject now, and give the preliminaries, that farmers may have an eye to the prizes in preparing for their Spring Wheat Crops, and also in looking after their Winter Wheat now in the ground. The prizes themselves are large, but aside from these, the credit of carrying off the Premium at the hands of the Empire State Society, the largest one in the country, will be worth competing for.

The "Orange Judd Wheat Prizes."

Open to the United States and Canada.

- Best Two Barrels of White Winter Wheat.....\$100.
- Best Two Barrels of Red Winter Wheat.....\$100.
- Best Two Barrels of Spring Wheat.....\$100.

To be exhibited at the next Annual Fair of the New York State Agricultural Society (1893) under the rules and regulations of the Society. The Committee of Award to include at least one experienced, practical miller. Each sample to be accompanied by 100 stalks from the same field, with heads and roots complete, and also by a reliable written statement, properly verified, and confirmed by two credible witnesses, giving the name of the variety and source of the seed; the size of the field, the character of the soil and the crops and manures on the same for four years past; the depth and mode of preparing the ground, and the time and mode of sowing and harvesting; the precise method of selecting and cleaning the samples; and any other particulars that may suggest themselves to the exhibitors.—The written statements to be taken into account in making the award.—The written statements, and the three samples receiving the prizes to be the property of the Society.—All other samples to be sold at auction during the fair, for the benefit of the exhibitors, when desired.

The Flower Garden.—Those who wish a guide to the operations in the flower garden will find Bruck's New Book of Flowers the best of the works on this subject. Its directions are plain and practical, being the result of long experience in the cultivation of flowers. Price by mail \$1.75.

Sod Fence Query.—"I. B. S.," of White Hall, Mo., wishes to know from the readers of the *Agriculturist* how long a prairie sod fence will last in Missouri, and the best way to make one. We shall be glad to learn the experience of our Western readers who have used such fence, accompanied by profiles of the fences and ditches, with the most lasting slopes for both.

Grape Vine Literature.—Fuller's Grape Culturist, Mohr's Grape Vine, My Vineyard at Lakeview, Hunsman's Grapes and Wine, are all excellent works at moderate prices—see book list on page 84. Strong's and Mead's works are more expensive. They all differ in some particulars, but either is a safe general guide.

Sweet Herbs.—"Market Gardener," Bloomington, Ill., wishes to know, "whether there would be a ready sale for dried sage, etc., at a fair price." Sweet herbs are raised in the market gardens near New York as a second crop, and are considered a paying one. They are put up in loose bunches and are sold green or dry, according to the season. In this state they are so bulky that it would not pay to send them any great distance. Those brought from distant places come pressed in packages or are ground and put up in tin boxes, and are mainly sold by druggists and grocers. This branch of the business is chiefly in the hands of the Shakers, and we are not acquainted with the many statistics concerning it.

Planting Cuttings.—In the "Notes

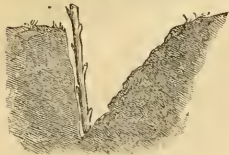


Fig. 1—CUTTING TRENCH.

from a neglect of this. A light porous soil around the cutting allows it to dry out, and besides this there is something in the close contact of the earth with the cutting which seems to favor the production of roots. We give from that very practical work, Fuller's Small Fruit Culturist, two illustrations. Figure 1 shows a section of the trench in which the cuttings are to be placed; this is made with the spade, by thrusting it down perpendicularly, and throwing the earth to one side. This gives a trench with a nearly perpendicular wall, against which the cuttings are to be placed. After the cuttings are put in, from two to four inches apart, some soil is thrown in, and pressed down firmly against the base of the cutting by means of the rammer, figure 2. This implement is shaped from a piece of 2-inch plank of convenient length. In its absence, use a bit of board.



Fig. 2.

"Russian Crab."—A pomologist who knows, writes us: "Certain nurserymen or interested parties West, are pushing the Tetofsky apple as the 'Russian crab' trees, at \$1 each, I hear. It is hardy for the North-west, but no crab whatever; and from several years' trial of it on my soil, it does not compare in general productiveness and value with the Duchess of Oldenburg. Why not sell it under its true name?"

Planting Orchards.—"G. B. G.," Decatur Co., Ind., asks: "How should an orchard be planted on flat, wet, heavy clay soil, drained only imperfectly by open ditches? It cannot, of short of great cost, be well drained." Surface planting is often practised at the West, and is much better than placing the roots in a heavy, damp soil. The roots of the tree are placed upon the surface of the soil, and a broad, low mound of earth heaped over them. In the subsequent working of the orchard, the earth is thrown towards the tree and thus the drainage is made more effectual.

Tan Bark as a Mulch.—"J. White-mors, Broome Co., N. Y., has been told that tan bark used as a mulch will injure the soil, and asks if it is true. Simply used on the surface it will do no injury. If a large quantity of tan bark were worked into a very light soil, it would be a detriment mechanically, rendering an already too open soil still lighter. When decomposed, and it decays very slowly, it makes a good manure.

Trees for a Wet Soil.—"A Young Farmer," asks: "What kind of trees shall I set out on a Western wet marsh for the purpose of making shade for cattle, the marsh not being so wet but it can be mowed with a two-horse mow." The Tamarack or American Larch, the Poplars or Cottonwoods, or any of the tall-growing willows, such as the White or Golden. We have never seen the Weeping Willow used for this purpose, but have no doubt it would answer admirably. It grows rapidly, makes a fair shade, and is one of the first to leaf out in spring, as it is the last to shed its leaves in autumn.

Grapes for a Wet Soil.—"F. H. Dickson says: Please give us your opinion on grape culture in this Territory. Climate as follows: Frosts not very late in spring, fall from mid of Sept. to 15th of October.

season very dry, so much so that irrigation is necessary for the raising of most kinds of crops. Soil, all kinds usually found in Illinois or Wisconsin, except that it invariably has more or less alkali in it. The winters as a general thing are mild, with but little snow, and some very high winds. Wild grapes grow here, and I am anxious to try an acre or two of tame grapes, if, in your opinion, they will prosper here. What kinds would you advise me to plant?—Your soil is not very different from that of parts of Northern Mexico, where we have seen the grape flourishing. If you have no late frosts in spring, and can irrigate, there does not seem to be any good reason why most of our varieties should not succeed. As to the sorts to plant, it must be in great measure an experiment with you, and if no one has done it before, you can not do a better service to Colorado than to make a trial of the leading varieties. We think that the Israhella, which has succeeded so well at the South, should be one of the newer sorts to be tried, but we would advise an experiment with all the leading sorts. Please report.

Dangerous Oils.—In an article in the Household Department, reference is made to a law concerning the sale of oils. It is to be found in Section 29 of Amendments to the Internal Revenue Law, approved March 2, 1867, and reads as follows: "And be it further enacted, that no person shall mix for sale, naphtha and illuminating oils, or shall knowingly sell or offer for sale, such mixture, or shall sell or offer for sale oil made from petroleum for illuminating purposes, inflammable at less temperature or fire-heat than one hundred and ten degrees Fahrenheit; and any person so doing shall be held to be guilty of a misdemeanor, and on conviction thereof by indictment or presentment in any court of the United States, having competent jurisdiction, shall be punished by a fine of not less than one hundred dollars nor more than five hundred dollars, and by imprisonment for a term of not less than six months nor more than three years."—If some one who is able to bring a case before a U. S. Court, wishes to do so, he can find subjects enough in every town. Show this law to the man of whom you buy your kerosene—also test the oil as directed elsewhere.

Cleaning Knives and Forks.—Next to a clean plate, clean knives and forks are desirable, but in some respectable families one finds a clean plate, and even a napkin sometimes, where the knives and forks are exceedingly dingy. If knives have become rusty by disuse or carelessness, cover the blades with sweet oil, and after lying a day or two rub them with unsalted lime until the rust disappears. For knives and forks the common scouring brick, freely and strongly applied every day, is very good. This not only improves the appearance of the table, but is a good appetizer, and helps digestion more than the best bitters in the market.

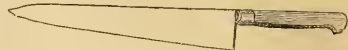
"Wood Hangings."—"New era in house decoration."—Being prompted to investigate a "New Wood Hangings," we found ourselves in one of the most beautifully decorated rooms we ever saw. The walls were, so to speak, veneered in panels with choice and brilliant woods of many hues tastefully arranged, and oiled so as to bring out their colors. These were put directly upon the plastered walls, just like paper hangings. We saw the veneerings or "wood hangings," as cut from the log, and noticed White wood, Holly, Maple, Beech, Chestnut, Oak, Cherry, Mahogany, and Black Walnut, and were told that the veneerings, as soon as cut, were moistened with glycerine, a substance which never dries, and so they are kept moist, tough, and flexible, until applied to the wall. So far, the fact of actual use has been favorable, as we learn. It is said to cost less to cover walls with this than with good paper hangings, and a joint-stock company has been formed to carry on the business.

Ash Receptacles.—Anthony M. Carson, Clark Co., Ohio, writes to the *Agriculturist* describing an ash receptacle called "Hall's Ash-House," which appears to consist of a hopper with a sieve at the bottom, forming the top of the iron-lined, wooden ash-holder, which may be used as a leach tub as well. When the ashes are leached, by undoing four hooks the box may be taken off from the ashes and set up again. The idea seems to be a good one, and such an ash receptacle would not be difficult of construction. Mr. Hall may have a patent for it, but if he does not enable the public to buy it, he must risk people making use of his ideas.

Eggs Kept Fresh 8 Years.—"Salt and Lime."—J. Baker, New Haven Co., Ct., has heard that salt and lime will keep eggs sweet a long time—even eight years, and asks for the proportions of the ingredients. We have heard of this mixture being employed, and have used simple lime water, or a very thin milk of lime, with success for a few months. The salt may be, and probably is, a valuable addition. We would make the lime to a

pasty consistency, after a few hours or days thin it to a milky fluid, adding salt enough to make a moderately strong brine, and try the experiment with a few dozen eggs, pouring the mixture over them in a jar that may be kept closed. We should be glad to know how to keep eggs fresh for six months.

A French Slicer.—Those who have visited city restaurants have no doubt been impressed with the skill that could make so small a weight of meat furnish such a great show. A large plate has its surface



FRENCH SLICER.

beautifully covered with slices of a thinness that are the admiration of any but a hungry man. The carving of meats, as well as the equally delicate cutting of the bread, is done with a knife called a French Slicer. For some time we have used one of these as a carving knife upon the table, and though it is not elegant in appearance, it does such excellent work that we think our readers would like to know about it. The engraving represents the shape; it has a broad and very thin blade of most excellent steel, the weight of metal being put in the width of the blade, and not in its thickness. The one we have has a blade 14 inches long, but they are made both longer and shorter. They are kept in the cutlery and furnishing stores.

Soft Water in Cement Cisterns.—The Journal of Chemistry says that washing the cistern over inside with silicate of soda, "soluble glass," will prevent the water becoming hard, and a subscriber records his entire success in following the advice. This is worth knowing; the material is easily obtained in cities.

Making Soap in the Family.—Leaching ashes, boiling lye, and soap making on the good old plan, are tedious, and, on the whole, unprofitable operations. We can far better buy our soap, and use the ashes on the onion bed or elsewhere. But we have found the "Sapondier," of Clifford Pemberton, Pittsburgh, Pa., excellent—so much so that we not only use up refuse grease with it, but buy tallow, and have no trouble in making good soap cheaper than we can buy it.

Pigeons.—Mr. Tegetmeier, the author of the Poultry Book, and editor of the poultry department of the London Field, has recently written a book of 190 pages, royal 8vo., on Pigeons, illustrated by 27 rich colored plates of the most striking varieties, which is published by Geo. Routledge & Son, London, 1893. Few persons who are familiar with the common blue pigeons of our city and village streets, are aware of the great number of varieties into which the species (*Columba livia*) is, so to speak, broken up. Our common blue pigeons are very much like the wild Rock Pigeon of Europe, which is said to be the parent of all the domesticated varieties. Not even do barn-yard fowls vary so greatly as pigeons. They have a greater variety of color, of form, of habit, and of flight. The work shows all these peculiarities, and besides being a standard guide both for breeding and for judging of the birds at shows, it is an elegant center-table ornament. For sale at the office of the *American Agriculturist*, or sent by mail for \$5.00.

An Improvement.—We thought our old office at 41 Park Row a very good-looking one, considering that the hurry and bustle of a large, active business makes the best-looking place a scene of confusion. But our "illustrious successors," Messrs. B. K. Bliss & Son, have completely eclipsed all we could do, and old 41 Park Row shines as one of the most beautiful and well-ordered seed establishments in the country. It will pay to drop in, and see the fine display of good seeds and ornamental things to adorn the rural home. The *American Agriculturist* retains an office for subscriptions and the display of books, at the old stand of 41 Park Row.

Cost of Cheese Factories.—"P. G.," of Vermont. The capital needed to start an enterprise of this kind depends upon the number of cows to sustain it. In eight factories in Massachusetts, the cost ranges from \$3,000 to \$8,000. In the report of the American Dairyman's Association the average number of cows to a factory is put at 453, the highest being 1019 and the lowest 140. The better way is to visit a cheese factory in running order, before perfecting your plan. And before building, it will be well to consider if, at the present prices, a butter factory, or one where the making of cheese and butter are united, will not pay better than a cheese factory. The price of butter has been for some time quite high. Our *Agricultural Annual* for 1893 (price 20 cts.) contains an excellent article on Cheese Factories.

"Shakers."—The so-called "Shakers" have one peculiarity that might be copied by everybody. If one is told that a flannel, a pair of stockings, sweet corn, sage, dried pumpkin, apple sauce or hrooms, or any such thing, is made or put up by the Shakers, there is no more to be said. The seller knows that he has given it the highest praise, and the buyer knows that it is just what it pretends to be, both in quality and quantity. If every one who sends things to market would be a "Shaker" in these respects, we should have no more "topped-off" barrels, baskets and boxes of fruit; five pounds of grapes would not include a half pound of pine wood, very nice pine but dear at 20 cents a pound,—lard would not be one-third water, and soap half anything else but soap. We sometimes expose these little ways of dealers, but the task is great. People do like to be cheated, but the Shakers, so far as we know them, are as much behind the age as was old Sol Gills,—they do business in the old way.

Material for Cellar Walls and Floors.—It is well-nigh impossible to make a cellar dry in the midst of a wet soil. The best place to lay a drain to secure a dry cellar is directly beneath the foundation stones—lay tiles if they can be got, otherwise a small V-shaped drain of small stones. The walls should be laid of stones in a mortar 4 parts lime and 1 part cement, with plenty of clean, sharp sand. Any kind of earth or gravel may be used to fill in between the standing earth and the wall. The best cellar floor is made of a grouting of broken stones spread over the surface; this pounded flat and coated with a cement mortar mixed with coarse gravel, and smoothed down level before it sets. If cellars are wet, deeply laid drains on the up-hill side will usually prove a cure. Shallow drains through the cellar and carried off down the hill would usually be effective.

Fresh Earth for Stabled Animals.—**"H."** of Morrisville, N. J., writes as follows: "From an experience of many years, I am satisfied of the beneficial results from giving stabled animals,—horses, cattle, or swine—what fresh earth they will eat, say twice a week, or oftener. It promotes and regulates their digestion, gives tone to their appetites, prevents disease, keeps their coats in fine condition—promoting their general health. I usually lay in a good supply of thickly cut sods, and throw some into their troughs, twice a week. Let those who have doubts try the experiment, giving the same to part of their stock and withholding from the rest for a few weeks, and their doubts will be removed." All cattle in grazing occasionally pull up a tuft of grass, and eat it, roots, earth, and all. This certainly does no harm, and we are not surprised to learn that in "H.'s" long experience he has found earth to supply a want of the animal economy essential to the highest state of health.

Green Grass and Weeds for Manure.—Mr. Fortune, to whom we are indebted for so many new plants from Japan and China, gives the following account of the use of green manures in those countries: "In China, bullocks and buffaloes are employed to plow the land, but in Japan it is prepared by manual labor alone; a pronged fork is employed to dig and break up the soil. Vegetable matter is used in a fresh state for manure, as in China. Women, old men, and children were employed on the edges of the fields and on every hill-side, in cutting grass and weeds for this purpose. These, being scattered over the land and mixed with mud and water, rot in a very short space of time, and afford nourishment to the rice crops. A week or two after this fresh manure is thrown upon the land every trace of it disappears from the surface. It probably goes on decaying for some time underground, thus feeding in a peculiar manner the roots of the paddy with those gases given off during the process of decomposition."

Lime for Cabbages.—"J. S." Mass. who lives on "sand prairie" land in Illinois and can get no stable manure, wishes to use lime as a substitute on his cabbage fields. Lime is properly no substitute for animal manure, yet it may be, and probably will be, an excellent application for this crop. As a rule, on pretty good land lime alone with good culture will probably insure a fair crop of cabbages. Salt is useful also, and an excellent application is lime slaked with a strong brine.

Fermented Manure.—"J. S." Mass. The use of heaping up manures in the yard and under the sheds is to give them a chance to ferment. Whatever may be the philosophy of the matter, it is pretty well established that it pays to compost all manures and fork them over once or twice before using. The most valuable constituent of green manures, the nitrogen, is not immediately available to plants. In the compost heap this becomes ammonia, which is plant food, and is diffused through the whole mass; the vegetable fiber is also decomposed and all coarse lumps are broken down. A part of the efficiency of manure depends upon its

fineness. Besides it is often an advantage to mix the manures of all the domestic animals, and make the whole mass as uniform in quality as possible.

Mill-pond Mud.—"Is the mud which has accumulated in an old mill-pond valuable as a top-dressing for grass? Should it be mixed with lime?" There can be no doubt of its value. If it contains many sticks and leaves, partly decayed, it would be well to compost it with lime. Have it ready to apply after the grass is cut.

Transactions of the New York State Agricultural Society for 1866.—This report brings the record of the Society's doings up to April, 1867. It was received towards the close of the year, long after the very important information with which it is replete had ceased to be of interest as news, but simply valuable as matter of record. Such elaborate and thorough trials of implements as the Auburn trial of Mowers and Reapers in 1866, or that of Plows in 1867, excite great interest at the time they take place, but a year and a half afterwards there are very few persons who wish to read, or even to refer to the reports. This delay is now supposed to be unavoidable. We think it is not so, but that if the reports were placed in the hands of some energetic publishing house, to be furnished free or nearly so to the Society, and put upon the market while interest in the subjects is still warm, they would benefit ten times the number of people they do now.

This volume is, we believe, the largest ever issued by any American Agricultural Society, being an octavo of 1066 pages. It contains, besides the usual reports of the Society's meetings, fairs, addresses, etc., and the abstract of the reports of the County Societies, and of the American Institute, the report of the entomologist D. Fitch, the report of the Mower and Reaper trial at Auburn, an elaborate exhibition of the Agricultural Statistics of the State, by Dr. Franklin B. Hough, and numerous other papers, valuable not only to the citizens of the State of New York, but to agriculturists everywhere.

Bees in March, by Wm. W. Cary.—*Rye meal to promote early breeding.*—As soon as the weather is warm enough for bees to fly freely, *unballed* rye meal should be set out in shallow boxes, say six inches deep, in a sheltered place, protected from the wind, where the bees can have free access to it until early blossoms appear. Many colonies of bees are deficient in bee bread; these would not breed to any extent until the appearance of early blossoms, unless supplied with a substitute. Rye meal is the best known. Many complain that they cannot get their bees to work on meal. My method is very easy and simple. On a day when your bees are flying freely, set out your boxes with two quarts or more of meal in each box, then take a small piece of comb with a little honey on one side, hold it to the entrance of a hive until a few bees commence to take the honey, place it in the box directly on the meal—in a short time they will have plenty of bees working on the meal. Water is another important requisite. When not to be obtained near the apiary, supply it; they prefer to take it from a warm, sheltered, sunny spot where straw or something of that nature is thrown out.

Spring Wheat.—Theo. Gaasch, La Fayette, Ind. There is a great confusion of names of the spring wheats—Club, Flie, Tea, etc., are popular names. The same wheat may be bought in different markets under different names, and various wheats under the same. Unless you have neighbors, good farmers who have clean, plump wheat to sell, send to some seedsman or dealer in agricultural implements in one of the large Western cities, for samples and prices of spring wheat, then make your choice, order by telegraph and have the wheat come on by the next train. The old Italian Spring, or something bearing its name, has now a reputation at the West. It was discarded or fell into neglect a few years ago.

Wheat—Chess—A \$1000 Offer.—Some still complain because we do not open our columns to a wider discussion of this subject. We have been looking into the matter for more than twenty years past—have studied it in its scientific relations—have received and read thousands of pages of manuscript, pro and con,—have offered prizes, and had men come hundreds of miles with specimens to claim the prizes, and seen them return perfectly satisfied that they had made a mistake. We doubt not that many are honest in their belief that wheat will really produce chess; but we are just as sure that it will not—can not; and while seeking to devote our columns to such topics as will most benefit the largest number of our readers, it does not seem profitable to take up further space on this particular subject. Please allow us the same liberty of judgment in this respect, that we cheerfully accord to others.—We will only add here, that Mr. L. Gore, Chagrin Falls P. O., Ohio, an old and successful farmer, is fully convinced that wheat will turn in-

to chess, and to show his faith, and, if possible, settle the question, he offers to wager \$1000 that he can produce chess from wheat or rye, or both. His neighbor, Mr. David Robinson, will make affidavit that he has taken a kernel of chess from a wheat stalk, where it certainly grew. Mr. Gore's directions for securing the change are as follows: 1st. Sow rye in spring, and pasture it all summer; the next spring it will yield chess. 2nd. Sow winter wheat, or rye, or both, in June, pasture until December, and let it grow the next season.—If any are disposed to try the question with Mr. Gore, they can correspond with him.—We give his full address above. We have not time to take part in the correspondence, but we advise Mr. G. to look out for his \$1000, if any enterprising man should accept his proposition. Perhaps he could not better use the money for the good of mankind, than to lose it in "settling" this "vexed question." Please excuse us, if we do not publish or answer the next hundred letters that come in about Wheat vs. Chess.

Cob Meal.—"B. D." Hartford. Our impression is that there is too little nutriment in cobs to pay for grinding. The cobs furnish bulk, but food should be selected that has nourishment in the bulk. If Indian meal is too concentrated, add roots, either cooked or raw, and you will find a gain of flesh and milk.

Poultry Notes and Gleanings.—**POULTRY IN A SMALL ENCLOSURE.**—You can keep a score of hens and rear chickens from them on 500 square yards. If it is not all grass, you will have to supply them with green food. They must have green food and dust.

TO MAKE A HEN SIT IN A STRANGE NEST.—A broody hen may be made to sit in a strange place by being put on her eggs at night, in the dark, and shut down closely. After a day or two she will keep to them.

CAMPFIRE ADMINISTERED TO CURE GAPS.—The dose for a chicken five or six weeks old is a pill of camphor the size of a small garden pea. Where the camphor julep given to them to drink is strong, they seldom require a pill. It is the odor of the camphor that kills the gap-worms; there is no real contact with it, which is impossible, because the parasites are in the windpipe.

HENS EATING EACH OTHER'S FEATHERS.—Spanish fowls are more prone than any to eat each other's feathers, and, like most bad habits, it finds many imitators. There is no doubt it arises in the first place from the lack of some necessary food—something they require at this season of the year. Those that have no access to grass always do it. We believe if they are supplied with a grass run they always discontinue the habit. A good supply of lettuce cures them, and those that are gone to seed are the best for the purpose. If you cannot give your fowls a grass run, let them have large sods of growing grass, cut with plenty of mould, thrown into their pens daily, and supply them with lettuce freely.

American Herd Book, (Short-horn), Vol. VIII.—This invaluable register (edited by Hon. Lewis F. Allen, Buffalo, N. Y.) comes to us with the beginning of the year. It contains the pedigrees of upwards of 1,000 bulls, and a proportionate number of cows of this royal breed. No man can enter upon the breeding of Short-horns with a view to establish a herd of them and to raise animals which shall be a credit to his breeding, without a familiarity with pedigrees, such as can only be gained by the faithful study of these volumes. The editor assures us, in his preface, that he "has always been careful to exclude such pedigrees as had not, on their face, or by accompanying credible documents, a fair evidence of good breeding." Nevertheless he adds: "It is presumed that every cattle breeder and buyer of pure blooded cattle will form his own judgment of the quality of the pedigrees, (of the stock), he breeds from, or buys, and place such estimate upon their value as he chooses, or his interest may dictate." There is, therefore, the necessity for intelligent study of these pedigrees, to learn which show purely good breeding enough to be admitted, and which simply of blood. The work is embellished with a number of lithographic plates and engravings on wood of animals, each filling every point in the scale of absolute perfection of Short-horns so accurately that any one not having implicit faith in the artist, (Mr. Page), and in the faithfulness of his drawings, might suppose that much of the likeness to the originals had been flattered out. The frontispiece of the volume is a picture of the piece of bas-relief statuary occupying a niche in a tower of the Cathedral of Durham, England, representing a cow and two milkmaids. The cow has a good small Ayshire head, a very straight back and belly, a deep body, full udder, and coarse legs and feet. She is very small, as one of the milkmaids is represented as laying her arm over her back. After noticing the exceeding squareness and depth of the body, we look for the inevitable initial (P) in the corner, and, finding it, wonder if the artist has flattered the subject to please the patron saint of the church, or from sheer force of habit.

Coffee a Cure for Scours in Calves.

—Mrs. N. Howard, of North Charlestown, N. H. writes: "A subscriber asks for a remedy for scours in calves. I send a simple remedy, namely: Three table-spoonfuls of ground Java coffee, put into milk or in 'slops' given to a cow. This has in several instances cured the scours. Sometimes the second or third dose is required. This is my remedy for calves, and for pigs also, in smaller doses, of course, and it has never failed.

Oil-cake.—What Is Oil-cake?—N.

Inkham, Quincy, Ill.—The common vegetable oils, namely, linseed oil, hemp-seed oil, rape oil, cotton-seed oil, castor oil, olive oil, poppy oil, etc., are all expressed from seeds. This is accomplished by the action of heat and pressure upon the ground seeds. The pulp which is pressed being usually confined in sacking, when the pressure is over, the residue is in the form of flat cakes, quite hard, and impressed with the strands of the sacking. These cakes constitute the oil-cakes of commerce. When "oil-cake" is spoken of, however, that of flax-seed (linseed) is uniformly meant. Other oil-cakes are called by the name of the seed, as rape cake, cotton-seed cake, etc. These commonly used as feed are linseed and cotton-seed cake, and in Europe rape cake. Cotton-seed cake, which is considered safe for feeding, should be from the "decolorized" seed—that is, seed which has had the shell taken off before pressing. All oil-cakes that can be safely fed are very nutritious and fattening, and increase the value of the manure of animals. The castor bean leaves a residue called castor pomace, which, though unfit for feed, is an excellent manure.

Raising Barley.—"J. B. G., Jr.," Baltimore.

Barley is adapted to soils intermediate between good wheat land and rye land. It follows corn, potatoes, or any root crop well; not other small grains. It is best to sow it on a clover or grass sod, turned over in the fall, and not put in fallow ground. However, if you can turn the sod over flat this spring, or, better, break it up with a Michigan or double plow—that is, a large plow with a small one cutting the sod simply, set upon the beam like a conter—you may get a very good crop. Three to five hundred pounds of good bone-dust, or two hundred pounds of guano, well harrowed in, will help out the crop on poor soil. Use about two bushels of seed on ordinary land. Barley is always sowed in the spring.

Chester White Hogs.—E. H. Edkin, of

Williamsport, sends us the weight of six piglets of his, 14 months old, the property of A. G. Shiffer, as follows: No. 1, 635 lbs. live, 390 lbs. dressed; No. 2, 535 lbs. live, 530 dressed; No. 3, 583-522; No. 4, 523-493; No. 5, 436-400; No. 6, 496-376.

Manure Questions and Answers.

—"Line upon line, precept upon precept." We answer questions about manures and their combination, preparation, production, composting, and application, with great pleasure, for on their correct management depends more than on any other one thing the future agricultural prosperity of this nation. There are some statements which we might make every month, and without referring back to see, would say were so made, which nevertheless require to be made again and again in response to earnest inquiries of people who are only just beginning to think practically upon the subject.

Lime and Salt.—"P. P. S.," E. Greenbush.

"What effect will lime and salt have on a compost of muck and yard manure?" You compost yard manure with muck in order that the mixture may ferment, and become fine and homogeneous in its character. The proportions of materials may be determined by your convenience; neither will harm the other. One load of manure to four of dry muck, well mixed and packed, will cause a fermentation; or to three, or one to two, would often be better. Lime and salt—that is, lime shaken with brine—will do this compost no good, and might better be applied to the field, if needed there. The place for the salt and lime mixture is in simple muck or peat, and so used it will cause a fermentation and breaking down of the lumps, so that the mass will be fine, and fit either to use in a compost with manure or otherwise. Here also the proportions may, and should, vary from one bushel to one barrel to the ox-cart or two-horse load.

Hen Manure in the Garden.—"H. R. M.,"

Newark, N. J., asks how to use hen manure in an ordinary fruit and vegetable garden. Ans.—Make a good compost with earth, or better with muck, mixing with it, perhaps, well sieved coal ashes, and adding to it chamber-lye or soap suds enough to moisten, but not wet the mass. After it has fermented, put it where you intend to raise vegetables, and fork it well in, mixing it thoroughly with the soil to a depth of 7 to 10 inches.

Manure for a Shallow Clay Soil.—The same asks: "What manure shall I put on a shallow red clay, on

a hard pan substratum?" Ans.—The material of which bricks are made in the shape of pipe tiles, laid carefully in rows 3/4 or 4 feet deep, forming tubes which, if a slight descent be given them, will cause a rapid drying of the soil, a breaking up of the hard pan, access of the roots to new soil, access of air to the lower parts of the soil, and a preparation of the soil, so that any manure will tell.

Line on Clays.—On such a soil as above described, lime will act very favorably. Apply it after spading deeply on the surface. Use less in the spring than in the fall. Half a bushel to the square rod is a very fair dressing—a peck would probably produce a noticeable effect, and in autumn no harm would come from a bushel or more.

Ashes and Hen Manure Compost.—Eugene Hodgson. Take care about the mixture of wood ashes and hen manure. You will lose much ammonia unless the heap is well covered with muck or loamy soil, as well as mixed with the same. If the hen manure constitutes only one-fourth of the compost, and it is well mixed and free from lumps, it will not hurt corn if put in the hill.

Goose Manure.—There is a great prejudice against this excellent fertilizer. It needs only to be well composted to be exceedingly valuable. Geese eat grass, and drink a great deal of water, but the moisture passes off chiefly through the skin and lungs, and their dung is dry and strong; hence it needs composting.

Broom-corn. ("D. C. C.") is raised on any good corn ground. It is best to select that which is not weedy, and especially not overrun with quack or couch grass. Plow in manure, or plant on a sod, calculating to use ashes or some fertilizer in the hills or drills. Harrow thoroughly, and sow the seed at early corn-planting time. The hills or drills should probably be about 3 1/2 feet apart in your latitude, (Mississippi.)

Loose Wagon Tires.—Much expense would be saved at blacksmiths' if the wheels were made of thoroughly seasoned wood, and the felloes were soaked in linseed oil. Steel tires are as economical upon wheels as steel rails upon a railroad.

Timothy Dying Out.—"H. A. H.," of

Plainville, Minn., wishes to know why Timothy does not succeed well on their old lands. He says this grass "succeeds on new lands and thrives in corners and by the roadside, but does not do well on lands from which twelve grain crops have been taken in succession without any manure." This grass is more easily destroyed by close flooding or severe freezing than most other. The hard cropping has probably something to do with the failure in this case. The land in Minnesota, we are told, does not produce half the wheat it did in its virgin state, which shows the need of rotation and of manure. It is not strange that Timothy does not succeed on land so constantly cropped with grain. We would recommend a rotation of five or six years; say, 1, corn on the sod and lime, if it can be had; 2, oats or potatoes; 3, wheat with manure, sowing Timothy 8 quarts to the acre, with the wheat, and clover the following Spring on the last snow; 4, clover; 5, Timothy one or two years. The aftermath should not be fed if you wish to continue the land in mowing for a longer term. Deeper plowing also would have a good influence upon the grass as well as other crops.

One-Horse Bone Mill.—A great need

seems to be a cheap, efficient bone mill. The simplest means for crushing ones, next to the sledge hammer, is the stamp mill. This consists of two or more beams set upright, having heavy iron or steel "heads," on which they stand in a trough, having a bottom of hard stones or iron plates, and boxed around, so that pieces cannot fly off. The beams are lifted one after another by spurs on an axle; and, when raised perhaps 18 inches or 2 feet, fall with crushing blows. If care were had always to have bones under the stamps, we see no reason why both the stamp-heads and the bed piece might not be made of cast iron. Fre's dictionary, or almost any work on mining, will furnish plates and descriptions of stamp mills.

A Select List of Vegetables.—Some

years we have published a list of vegetable seeds, to aid our readers in making up a selection from the many kinds named in the catalogues. When this has been omitted, we have been reminded of it by a number of subscribers, and we are warranted in supposing that they have found it useful. The lists have heretofore been of such kinds as our own experience has indicated; the present one is made up rather differently. We requested our leading dealers in various parts of the country to furnish us with catalogues, marked in a manner to designate the estimation in which the varieties were held by their customers. We have in this way taken a vote on the vegetables, and though it has been some trouble to tabulate these returns, and get "the sense of the meeting," yet the work has been an interesting one. It is

curious to see how well fixed is the popularity of some varieties—thus the Winningstadt Cabbage is marked on every list, though in different numbers. One selecting from this list will not be likely to go far wrong, but we by no means assume that it comprises all the varieties worth cultivating. There are many novelties offered each year, and the progressive gardener will make a trial of some of them. Then again, an enthusiastic seed grower, like Mr. Gregory, of Marblehead, Mass., has many specialties which we know to be excellent, but as they are not kept everywhere, we do not include them in a general list, but refer for all novelties and specialties to the advertisements and catalogues of the dealers. We do not include those vegetables of which there are but one or two varieties. A list of those vegetables preferred by market gardeners will be found on page 102.

Beans—Early Bush.—Valentine, China, Early 6-weeks. **Late Bush.**—Refuge, White Kidney, or Royal Dwarf. **Pole.**—Lima, Horticultural, Wax.

Beets.—Bassano, Blood Turnip, Long Blood.

Broccoli.—Early Cape, Walcheren.

Cabbage—Early.—Wakefield, Early York, Winningstadt. **Late.**—Flat Dutch, Stone Mason, Marblehead.

Savoy.—Drumhead Savoy.

Cauliflower—Early.—Erfurt, Half Early Paris, Early Paris. **Late.**—Leomond, Nonpareil.

Celery.—Dwarf White Solid, Boston Market, Seymour's Superb.

Carrot.—Early Horo, Long Orange.

Corn, Sweet—Early.—Early Dwarf Sugar, sowed Sugar.

Late—Stowell's Evergreen, Asylum.

Cucumbers—Early.—Early Russian, White Spined,

Chister. **Late.**—Long Green Prickly, Long Green Turkey.

Lettuce—Early.—Silesia, Tennis Ball, Simpson. **Late.**—India, Butter.

Melons—Musk.—Japan, Nutmeg, Citron. **Water.**—Mountain Sweet, Mountain Sprout.

Onions—Early.—Yellow Danvers, Early Red, White

Portugal. **Late.**—Wethersfield Red.

Pears—Earliest.—Carter's First Crop, Dan, O'Rourke,

McLean's Advance, *Medium Early for General Crop.*—

Champion of England, Eugene, Napoleon. **Dwarf.**—

McLean's Little Gem, Bishop's Long Pod, Tom Thumb.

Late.—British Queen, Black-eyed Marrowfat.

Potatoes—Early Goodrich, Ash-leaf Kidney, Early Cot-

tage.

Radishes.—Long Scarlet Short-top, French Breakfast,

Rose Olive-shaped.

Squashes—Early.—Summer Crook-neck, White and

Yellow Scallop. **Late.**—Hubbard, Boston Marrow, Yoko-

hama.

Tomato—Early.—Smooth Red, Early York, Cook's Fave-

rite. **Late.**—Tilden, Fejee.

Turnips—Early.—Early Dutch, Red and White-top

Strap-leaf. **Late.**—White French, Robinson's Golden Ball.

Buy Reliable Seeds.—Many do not

seem to consider the great importance that attaches to the quality of garden seeds they plant, and buy their spring stock at the country store without regard to anything but the fact that they are seeds. Now we know that in many country stores good seeds are sold, and we also know that there is a great deal of trash disposed of. If in doubt as to the quality of the seed on hand, or offered near home, send off to some seed-man of known reputation, and get the needed supply by mail. All garden seeds, unless in larger quantities than a farmer would want, go cheaply and quickly by mail, and the most remote have equal advantages with those near large dealers.

The Catawba Grape and its Descendants, Diana and Iona.

BY C. W. GRANT.

[In our notes upon grapes, we some time ago stated that we awarded high praise to the Iona, when we said it was as good as a well ripened Catawba. In discussing this matter with Dr. Grant, we requested him to write out his own views upon the subject, which he has done. An opportunity for a more extended comparison of the Iona with a large number of other grapes, testing them daily for some weeks, led to the statement that we have already made, that in point of quality the Iona was "the best of our native grapes." We give place, though rather late, to Dr. Grant's article, with the remark that we think his position well taken, and that we think it will lead the public to discriminate more closely in the matter of quality, not only with the grape, but with all other fruits.—Evs.]

We have hitherto taken the Catawba as our standard in measuring the quality of our native grapes, both because it was more extensively known than any other good native kind, and because it possessed an assemblage of qualities that gave an idea of the grape as one of the best of fruits. Although we have never represented it able to

bear a rigid comparison with the best European kinds, we have ranked it far above the Isabella, and still higher above the great mass of those that are named on our lists.

It is a fact well known to all, that our best native kinds up to the Catawba, and including that have been far below the best foreign kinds, both from inherent faults and from the absence of excellence. Norton's Virginia, Elsiburg, and Lenoir, are exceptions, but not of sufficient moment to have a hearing on general grape culture. An analysis of the qualities of the Catawba will exemplify our meaning, and at the same time enable us to show upon what ground American grape culture now stands among ourselves, and in reference to foreign competition.

This is important at the present time, because a standard of quality and value has recently been called into operation by the introduction of new varieties very different from that which obtained no further back than half a score of years.

We have called the Catawba very good relatively to our own kinds, but it has never been so good that those who know what grapes in perfection are, have not desired better fruit, and made great efforts to obtain it from the vine-growing countries of Europe. And when it was ascertained that the fruit of these kinds could not be produced in the open air, in our climate, expensive houses were erected to obtain it by those who could afford the luxury. We may remark, in passing, that grapes in houses acquire a much larger size than in their own country in the open air, but do not equal them in fine, rich spirit.

The good qualities of the Catawba are abundance of juice that is sweet and agreeable, with some measure of the vinous and refreshing restorative and exhilarating power that belongs to fine, pure wine, but, of course, without its stimulating property. In consequence of these vinous qualities, good Catawba grapes grow upon the liking, and the enjoyment from them increases by use, but their defects also become more and more sensible. In the first place, the skin is always acerb, biting, and unpleasant, and must be carefully rejected. Second, there is always so much of tough, acid unripeness toward the centre, that it would spoil the enjoyment of the whole if it were chewed up together in the manner of eating foreign grapes. They are, in consequence, generally enjoyed by sucking the agreeable portion from the skin and swallowing the centre portion while it remains sugar-acid, all mastication being carefully avoided. This greatly diminishes the enjoyment and the dietetic advantages which are so important. Those who by use are cognizant of the qualities of what may be called perfect grapes, find but little enjoyment in even the best Catawbaws, and many avoid their use altogether. Third, even the best portion is always somewhat astringent, from excess of tannic acid, and, besides, is lacking in that pure, rich, and refined spirit that is the crowning glory of perfect grapes, and which enables them to make wine of the highest excellence.

Some of these defects appear to be very slight, and scarcely worthy of notice until brought into clear and bold relief by comparison with those that are free from them, when their importance exceeds belief.

The wine of the Catawba was the first of this country's production that gained any extended and enduring reputation. It has the same defects as the grapes, being deficient in richness and fullness, as well as in purity and refinement of flavor, with an excess of acid that renders it rather hard and unpalatable to many tastes. Its peculiar aroma, which is a greatly mitigated foxiness, becomes very moderate under the favoring circumstances of well ripened fruit, careful selection, and mature age. By some persons this aroma is esteemed an attractive excellence, but with the drinkers of pure, fine Hock wines, which the best Catawba most resembles, it would rank much lower in consequence of it, the effect being oppressive to the faculties, as is the case with all of that impurity that is usually denominated foxiness. It should be understood that the objection to foxiness in grapes or wine is not chiefly from the momentary unpleasantness to the palate, but that it deprives both of their animating property in proportion to its degree; it is, therefore, another name for unwholesomeness, which it is the office of all unpleasant savors and odors to indicate and guard from.

The Draxa ripens much earlier than the Catawba, and has a superiority over it in quality, for fruit and for wine, that has not yet been generally accorded to it. Its introduction would have been an event of much more marked importance, if a misunderstanding or disregard of its peculiarities of habit and requirement had not hindered it to making its way to favor as its merits deserved. It is exceedingly vigorous on generous soils, and has large leaves; consequently its bearing canes should be more sparsely "laid in" than those of the Catawba. It often fails to ripen the fruit of its first bearing, and does not ripen very early until the vines become well established; and when the soil is excessive in richness it does not bear young. It is richer and more spirited than the Catawba, and makes better wine, and when in best condition, it becomes ripe nearly to the centre. The berries are good to

eat by thorough mastication, the skin affording a pleasant, spicy addition to the rich, sugary, vinous juice. It is free from the astringency caused by excess of tannic acid in the Catawba, and has none of its foxiness or acerbity of skin, but it has an odor quite its own, that is unpleasant until the fruit becomes quite ripe, when it is but very slightly perceptible. Its wine is more rich and full-flavored, and less hard and tough than that of the Catawba.

Compactness of bunch should be named as one of its defects, lessening the vinous spirit of the fruit, and sometimes delaying or preventing thoroughness of ripening. It is one of the best late keepers, and is gaining in estimation as it becomes better known. It is generally less disposed to rot than the Catawba, but is not exempt.

The introduction of the Delaware advanced the ideas and the prospects of American grape-culture by an immense stride. Its influence is gaining strength continually by educating the taste, and making manifest the characteristic excellence that belongs to perfect grapes for fruit and for wine, and which places them in rank above other fruits.

In the Delaware there is the high degree of purity, refinement, and rich, vinous spirit that belongs to the best European kinds, and needs no excusing for harshness, astringency, or foxiness. The flavor is full and satisfying, and the severest criticism cannot detect a fault in this respect. It is a grape to be eaten, although its skins are nearly flavorless, and do not add much to the enjoyment; but they do not detract from it. When in best condition, it is good to the centre, but it is not always thoroughly so, and it is never quite uniformly tender to the centre. The berries are not large—often small—but the skins are so pure and unobjectionable, that they may be made to furnish the large, luscious mouthful that berries of greater size would afford, by taking several at a time and masticating thoroughly.

The defects of the Catawba are brought out clearly by comparison with the Delaware—we should say contrast rather, for that is the relation that these fruits appear to take toward each other.

The wine of Delaware partakes largely of the character of the fruit, as it does also in the two instances previously considered. The wine of the Delaware is unexceptionable in its purity and refinement, and has a peculiar attractive richness that distinguishes it from all other kinds; but it affiliates much more nearly with the warm, rich wines of Burgundy than with the Hocks of Germany. But the quality of the Delaware wine varies very greatly according to the latitude, climate, and condition under which the fruit ripens. In the warm climate of Cincinnati, in favorable seasons, it approaches the character of Hermitage or of Sherry. Towards its northern latitude it becomes nearly a Hock, but always maintains its distinguishing characteristics in purity and refinement of flavor.

We have considered the Delaware in this connection, not because we believe it to be a descendant of the Catawba, but because its affinities are sufficiently with this family to be considered with it in its bearing on the present state and prospects of grape-culture.

The Iona is an advance on the Delaware, and now presents itself for a critical examination of its character and qualities, and a searching inquiry into its history before and since its general dissemination. While it is found to be thoroughly native in habit of vine, it is so different in the essential character of its fruit from that of our native kinds, as represented by the Isabella and Catawba, that wrong and defective ideas prevail extensively concerning it, which it is important for the interests of grape culture to have corrected. In order to have a general clear understanding of these differences, it is necessary that they should be pointed out and accurately defined. They are no less than those that constitute the distinctions between the best foreign kinds and our natives.

The fruit of the Iona has no harshness in its skin, and nothing of foxiness or unpleasantness of aroma, but on the contrary the skin has a spicy vinous flavor, and is good to eat. In ripening, the process is first indicated by a general "clearing" of the berries, as the tendency towards transparency is designated by Europeans, and it does not begin about the circumference and proceed towards the centre, which it never reaches, as is the case with Catawba, Isabella, Diana, etc., but it begins at all parts of the flesh at the same time, and proceeds evenly throughout. The flesh or juicy part has something of meaty consistence, but this is uniform through its whole mass, and yields like delicate jelly to a very slight pressure of the tongue. This being the case, a ripe Iona is all ripe, having no fibre or toughness in any part of it, and it is all good to eat except the seeds, which are few and remarkably small. The juice or flesh, or, as we should rather say, pulp, is all sweet, rich, spirited, and agreeable in flavor, without any degree of harshness or impurity, leaving a peculiarly cleanly and healthful sensation in the month that is indicative of its stomachic qualities. A very common idea of "pulp" is that of toughness, which is wrong. The idea of pulp, as used by Europeans in describing grapes, is that of a homoge-

neous, non-fibrous mass, like that of which paper is formed, or that of the finest yielding flesh of a perfectly baked apple. The must or expressed juice of the Iona is as characteristically distinct from that of all others, as is its fruit, being exceedingly sweet and spirited, with a very agreeable wine-like fragrance and flavor.

It will be noted by those who are familiar with the best foreign kinds as grown in their native country, that the foregoing description of the Iona is equally applicable to those, while it is essentially in contrast with those that have heretofore been our best native sorts. The wine of the Iona is even more remarkable than the fruit. Having no uric, fibrous portions, very little remains after pressing except the skins and seeds, and the juice is all pure and rich to the last drop, and is so free from all acidifying matter that the process of vinification may be as safely conducted in a warm room as in a cellar. The wine is characterized by the extreme fineness, richness of flavor, and fullness of body that belongs to the best German productions, with the same antiferbic and stomachic qualities that are the crowning excellence of the famous Steinberger and Johannsberger, with a little more of animalization and less of acidity. The reports of our best wine-makers fully confirm the highest expectations that have been entertained as to the wine-making ability of the Iona. A fact that bears strongly in favor of American grape culture is found in the productive habit of the Iona, while all of the excellent kinds of Europe are either moderately or little productive.

The question that has risen and must be answered, practically at least, is: "What rank is the Iona destined to take by its merits in American grape culture?" A proximate solution may be gained by scanning carefully the chief points, and making comparison not only with our own kinds, but with those of Europe also, for the wines of Europe will dominate over those of America until something shall be produced far better in quality than has yet been done by the Catawba or the Isabella, and any of its congeners that are now before the public.

For the production of fruit, which is the part of most general immediate interest, the question is to be decided on domestic considerations only, but the same characteristics of quality will rule. I have endeavored to set forth the chief points by which both public and private considerations of the subject may be more understandingly conducted, so that truth may be elicited, and facts established. The subject is naturally becoming of great importance in general estimation, for what family is there that is not interested in good grapes, such as all have heard of, but few have known? And in wine, too, that is able to aid the sick, and invigorate the weak?

Raising Evergreens from Seed.

BY JOSIAH HOOPES.

[The large number of letters we have had asking the method of raising evergreens from seed indicates a gratifying interest in tree planting. Mr. Hoopes, whose Book of Evergreens is now nearly ready, has at our request furnished the following timely article.]

Seedlings of the evergreens are the most difficult to manage of any that come under the care of the propagator. The seeds abound in an oily, resinous fluid that quickly becomes rancid and destroys the germ, if they are taken from the cones a long time before using. The seeds of most species may be preserved for several years, if allowed to remain in the cones until wanted for planting. Most kinds germinate easily, but the critical season is when the true leaves are being developed, and before the stem becomes firm and woody. At this period the propagator should be on the alert to guard against sudden changes in the atmosphere, or an excess of moisture. *Damping off* is the bane of young evergreen seedlings, and the most experienced hand not unfrequently finds himself at fault to counteract it. A sprinkling of sulphur will destroy the various fungoid growths, so destructive to young evergreens, and dry sand counteracts the effects of too much moisture in the soil.

The fundamental principle in growing Conifers is to plant at the very earliest moment in the spring, as no amount of care or forcing by artificial heat will compensate for lost time. Some of the more hardy species will succeed in our

variable climate without resorting to glass coverings; as, for instance, the Arbor Vites, Norway Spruce, Austrian and Scotch Pines, Red Cedar, etc. In the case of these, we select a sheltered spot, and prepare the ground in the preceding autumn, by carefully pulverizing the soil, and incorporating a fair proportion of sharp sand with it, but never using stimulating manures. A coating of ashes is excellent. The following spring, as soon as the soil is in a suitable condition for the operation, shallow drills may be drawn out, and the seeds thinly sown. The soil should then be gently beaten down with the back of the spade, and nothing further will be necessary until the appearance of the seedlings, which soon occurs after a few warm days. We very much question whether any benefit results from deep and frequent cultivation of the soil between the rows, as our own experience has been exactly the reverse. Young evergreens appear to need a compact soil to counteract the tendency to dampen off; and they will survive the first summer more readily if the weeds be pulled without the use of the hoe.

Such species as produce berry-like fruit should have their pulpy covering removed by washing as soon as gathered, and the seeds placed in boxes of sand, or sowed at once in beds where they are to remain. If allowed to become dry they will frequently lie in the ground for two and even three years before germinating. This applies to the Yews, Junipers, and Red Cedar.

With the rarer kinds of evergreens we have used the following contrivance with excellent success. A cold frame is raised above the bed by placing a brick flat on its side, under each corner. After sowing the seeds, the sash should be placed on, and a thin coat of whitewash applied to the glass, to break the direct rays of the sun; after which an occasional slight syringing will supply all needful moisture.

This plan insures a free circulation of air, a moist atmosphere, and partial shade. Sometimes one becomes possessed of a few very rare seeds, upon which he desires to bestow extra pains. In such cases we prepare some turfy, sandy soil, and fill large pots within one or two inches of the rim, and sow the seeds in the autumn, as soon after gathering as possible, and place a pane of glass on the pot. The pots must then be set in a cool green-house or pit, secure from frost. Under the staging is a suitable spot. Towards spring the seed-leaves will commence making their appearance, and moisture must be withheld as much as possible, never, however, allowing the plants to actually suffer. When the young seedlings are well established, and show signs of producing their true leaves, they should at once be pricked out into single pots and placed in a cool, shady place for the remainder of the season. In summing up the requirements of evergreen seedlings in the earliest stages of their growth, we may say that in all cases they must have a free circulation of air, shade, moisture over the plants, but not in the soil, and an early planting.

The South as Desirable Farming Territory—Texas.

BY THOS. APFLECK, WASHINGTON CO., TEXAS.

[We are reluctantly obliged to divide Mr. Affleck's letter and present in this number what he has to say about Texas.—Eds.]

There seems to be much doubt in the North and West, as to whether or not the Southern States offer sufficient inducements to farmers and others to emigrate thither.

Whatever objections were supposed to exist from the presence of slavery there, so far as the condition of the negroes as slaves was concerned, have been removed by the result of the war. The late slave-holders, as a class, are ruined. Nothing is left to them but their lands, with their improvements fast going to wreck. Many are burdened with debt, the total of which, comparatively nothing whilst they held negroes as property, is now overwhelming.

These lands must be sold. They are generally in a form to admit of desirable subdivision. All have more or less of houses which could be easily made habitable for a time, and many have costly mills, gins, etc., upon them; stables, cisterns, etc., which, if not attended to, will fall into decay in another year or two. In many parts of the country, in the track of the armies, the fencing is gone,—but so is the live-stock which ran at large, and made fencing necessary.

As a rule, those lands, requiring but little done to admit of raising a crop, can be purchased for less than the improvements upon them cost. Many of them are under fence of impassable hedges, which could be reclaimed and brought into shape by less labor than fencing with rails would cost. A great breadth of country in Georgia, Alabama, and Mississippi, is one dense coat of that most valuable of all grasses for pasture, *Bernuda grass*, (*Cynodon dactylon*) which will support several times the quantity of stock per acre, when well set and upon soil that suits it, that any other known grass will, though a pest among the crops.

Texas! To do her justice would require a volume! In extent, vast; with soils of every possible quality, generally rich and calcareous; and, especially in the high, rolling, lovely prairie regions, with a climate unsurpassed on the globe, notwithstanding the greatly complained-of "Northerns." Although some portions have been fearfully afflicted this past season by yellow fever, Texas is the healthiest new country ever opened to settlement. I have seen more fatal sickness in one season, at an early day, on the streams of the West, from the Alleghany and Monongahela to the Missonri, than has occurred in all of Texas since her first settlement. Even the valley lands of Texas west of the Brazos, and many of those on the upper Trinity, Brazos, etc., are healthy, and cultivatable by white labor, as are all of the uplands, which, unlike those of most of the other States, whilst they are rich yet do not melt like brown sugar with every heavy rain. The valleys of the West, when irrigated, will be the gardens of the world! To those liable to, or threatened with diseases of the throat and lungs, the climate of the high prairies of Texas is an almost sure specific. No State offers greater facilities for manufacturing, and especially fabrics of wool and of cotton, and cotton yarns.

In Texas, there is abundance of water-power, of fuel, labor, food, etc., etc. And the raw materials, even to the dyes, as Indigo, Madder, wood, and Teazles, are producible at the door.

The greatest of all advantages now offered to the immigrant in the South is, that good lands, which have been long under cultivation, and hence are infinitely more healthy than if newly cleared, or broken up for the first time, can be bought for a song; houses at least sufficiently comfortable for a season; the facilities for a dozen or more of families, old neighbors and friends, settling closely together, with mill, gin-house, etc., sufficient for all; thus affording mutual support, countenance, and assistance, with facilities for schools and churches; and

that in an agreeable climate, where all of the most important staple crops and fruits of the world can be successfully grown.

Where several join in a purchase, time can always be had on a portion of the price, thus leaving more capital in aid of successful cropping.

To those coming South, to farm, I would say—Do not come in the belief that "Ye are the people, and wisdom shall die with you!" Were the sufferings of Job greater than we at the South are now undergoing? I trow not. Be assured that those men who have reclaimed this vast country from the wilderness, who produced crops that were the wealth of this continent, and went farthest of any to maintain the commerce of the entire world, were not absolute fools! Something, even in the present depressed condition, may be learnt from their experience. Seek it, and advise and follow those practices, introducing what you may deem improvements, slowly and prudently. Not a few have failed from pursuing an opposite course.

Many owners of large, improved places in this State are laying them off into small farms and renting to new-comers, who are not prepared to purchase, or deem it best to look around for a season. The unsalutary for good land, well located, is one-fourth of the cotton, housed in the seed, and one-third of the other crops, also housed. Many can lend team, implements, cows, etc., or will sell these on time. For men of moderate means, it is best to rent for a year or two.

Sheep-farming is a favorite, profitable, and pleasant pursuit. Wheat growing, market gardening, fruit growing, the grape and wine, lumbering, brick-making—in fact, almost any productive pursuit, well followed, succeeds in Texas.

Capital can find safer and better investment here than anywhere else. It is scarcely possible that anything is likely to more than temporarily check the progress of this great State.

The Determination of Sex in Breeding.

Occasionally enthusiastic breeders have thought that they had secured a means of regulating the production of animals of either sex at will. But a wider application of their rules has so far shown their facts to be remarkable coincidents, rather than proofs of the discovery of a scientific truth. It would often be of very great advantage to the farmer, if he could predetermine the sex of his stock, for there is usually a much larger demand for females than for males; but all the devices employed to invariably secure female offsprings in breeding animals are without any satisfactory results. There is nothing in the researches of science or in the experiments of practical men to throw any light upon this matter. It is a law of universal application that the proportion of the sexes among all animals that pair is about equal, while among polygamous species the females largely preponderate. All the rules which seem to work well in the practice of one breeder determine nothing in the hands of another. Some animals will produce for a long series of years only males, while others will produce only females, but, taking a whole herd and their progeny for a number of years, nothing has yet been done to disturb the proportion of the sexes. Any teachings, then, which profess to overrule this law in nature are to be received with suspicion. Experiments in this direction are not likely to be rewarded with success. Still, statistics are always valuable, and persons who are curious in these matters and conduct experiments should preserve records of their results.

GROUP OF IMPROVED SHORT-HORNS.—Drawn and Engraved for the American Agriculturist.—(See next Page.)



Improved Short-horns.

We present a beautiful engraving on another page of a group of Short-horns taken from life.

From time immemorial the counties of Durham and York produced a race of fine, large cattle, the cows being famous as deep milkers. From these sprung the Teeswater breed, and it is from this original stock, grazing in the luxuriant meadows watered by the Tees and its tributaries, that the Short-horns come. The name "Durham," or "Durham Short-horn," was early attached to this breed, but by consent of the principal breeders, it has been dropped and that of Improved Short-horn universally accepted. The breed, as it is, owes its celebrity, in fact its excellence, in a great measure neither to the Tees' pastures, nor to the breeders of Durham—but all England has contributed to the one, and distinguished breeders of various parts of the Kingdom have from time to time increased the other. The characteristics of the Short-horns have doubtless been borne by the stock of the best breeders in the section where they originated for a great number of years, but it was not until towards the close of the last century that they came to have such prominence among cattle breeders as their merits deserved. Early in the present century they were imported into this country, and from that day to the present have gained in favor with all breeders. The benefits which have already accrued to this country from the use of Short-horn bulls upon our common cows are beyond estimate. They have increased the size, rapidity of growth, and fattening qualities of our stock, thus improving the beef and cheapening its production. They have improved our milch stock also in a very marked degree. In breeding for general purposes—beef, milk and labor—wherever the soil is rich and the grazing is fine, we think there is hardly a doubt that Short-horns are the best bulls to use with common stock. Now-a-days the farmer who breeds from either "scrub" (that is "native") or grade bulls is shockingly behind the times, besides being blind to his own interests.

Walks and Talks on the Farm.—No. 51.

McAlister offered me \$14 an acre rent for land to plant corn, provided I would plow it for him. I told him this was more than I should probably get by planting it myself, but that I would not rent because no one who hires land for one crop would cultivate it as thoroughly as it should be. One neglected corn crop will injure land vastly more than the rent costs. The weeds allowed to go to seed would affect the land for years. Our plan is to sow barley after corn, and wheat after the barley. Look at the barley stubbles, and in five cases out of six you will see them covered with weeds. These weeds frequently reduce the following wheat crop eight or ten bushels per acre. And in this crop alone you lose more than the rent received for the land. But this is not the end of the mischief. The clover is not as good, and when you plow up the land the next time the weeds soon threaten the very existence of the crop. One year's seedling makes seven years' weeding.

"Do you not think you can make \$14 an acre profit on a corn crop?" At present prices, yes. At ordinary prices, no. Thirty bushels of shelled corn per acre is a good average crop in this section, worth, at 75 cents per bushel, \$22.50; corn stalks, \$5.50. Total receipts from the crop, \$28. Preparing the land for the crop, \$5; planting and seed, \$1.50; cultivating three times, twice in a row, both ways, \$5;

hoeing twice, \$3; cutting up the corn, \$1.50; husking and drawing in the corn, \$4; drawing in the stalks, &c., \$1; shelling and drawing to market, \$2. Total, \$23. Profit, \$5.00.

"Farming is a poor business." Yes, poor farming is a very poor business; but good farming is as good a business, at present prices, as I want, and withal as pleasant. A good farmer raises 60 bushels of corn per acre instead of 30 bushels. He doubles the crop and realizes *five times* the profit. His land is cleaner, and he has twice the amount of fodder to feed out, and makes twice the amount of manure, and this doubles his future crops and quadruples his profits. His land is getting richer and richer, while in the other case it will be likely to get poorer and poorer; ditto the farmer, and alas! alas! ditto his family.

"But what is a man to do who is poor and has poor land?" If he has good health, is industrious, economical, and is possessed of a fair share of good common sense, he need have no doubt as to his being able to renovate his farm and improve his own fortune.

Faith in good farming is the first requisite. If this is weak, it will be strengthened by exercise. If you have not faith, act as though you had.

Work hard, but do not be a drudge. A few hours' vigorous labor will accomplish a great deal, and encourage you to continued effort. Be prompt, systematic, cheerful, and enthusiastic. Go to bed early and get up when you wake. But take sleep enough. A man had better be in bed than at the tavern or grocery. Let not friends, even, keep you up late; "manners is manners, but still your club's your club."

"But what has this to do with good farming?" More than chemistry and all the science of the schools. Agriculture is an art and must be followed as such. Science will help—help enormously—but it will never enable us to dispense with industry. Chemistry throws great light on the art of cooking, but a farmer's wife will roast a turkey better than Liebig.

The cities are full of young men—many of them from the country—who are out of employment and are glad to work for enough to pay their board. They could save enough money by working on a farm for a few years, to buy one for themselves. But they think it more respectable to sell pins and measure tape. For my own part, I respect any man who is striving to make an honest living by any kind of manual or mental labor. But I give the preference to agriculture, because it is in itself the main foundation of our national prosperity, and because it calls into exercise the best faculties of our nature. A clergyman can be a farmer without soiling his cloth. As I was coming home to-day a city man asked me to give him a ride. "Do you live on your farm now?" he asked, "and how do you like it?" "Pretty well," I replied. After a few remarks as to the scarcity of water, what good sleighing we had had, and how warm it was to-day, &c., he remarked, "I wonder why you would not be a good man to keep a tavern." It seems that he and a few others had built a tavern somewhere and wanted some one to take charge of it. "If you had a few hundred dollars to buy furniture," he said, "you would get rich out of it." I told him I did not know enough to keep a hotel and that I liked farming. "But," said he, "you could have a farm there, though I have known a good many farmers who went to keeping tavern that soon ran the thing into the ground!"

Now, all this was intended to be very complimentary. In his eyes a tavern-keeper was

considerable of a man, and in return for giving him a ride he wished me to go home with the comforting assurance that there was one man at least who thought I was fitted for something better than a farmer. It is to be feared that I did not thank him with that degree of warmth such kind intentions deserved. He will doubtless conclude that "these farmers are a boorish set; they don't know enough to be polite."

One of the best farmers I ever knew used to say that he never remembered a season of drouth that was not followed by heavy crops the next year. The reason, in his case, doubtless was that he availed himself of the dry weather to cultivate his land thoroughly, and kill weeds, and of course better crops followed. But aside from this it is highly probable that a drouth enriches land by causing more water to rise from the subsoil, and, as it evaporates, the plant food which it contains is left near the surface. The country needs a heavy harvest this year, and we may reasonably hope for it. After the snow goes away the land will turn up superbly. I presume the West will put in an immense area of spring grains and corn, and as the markets of the world are bare, and with the present premium on gold, there is a fair chance for remunerative prices. What our agriculture needs is more capital, but as long as 5-20's bring in 9 per cent, there is little prospect of money being invested in farming operations. We can at all events, however, put in such crops as we do sow or plant in good order, and can subdue the weeds wherever the cultivator can be used. This alone would increase our crops enough to pay all our taxes, high as they are.

The trouble is that nearly every farm needs more or less draining, and till this is done, we lose half the benefit we should otherwise get from manure and good tillage. The system advocated in Draining for Profit, of making a plan of all the draining necessary on a farm, and doing the work at once, is undoubtedly the most economical, but few of us have the necessary capital. Mr. Swan, whose farm adjoins John Johnston's, underdrained in this systematic manner, and the cost was much less than Mr. Johnston's. The farm contains 344 acres. It is high, rolling land, but the ridges are full of springs, the water from which saturates the lower portions. Most people would say that such high land did not need draining, but the crops told a different story. The first year after Mr. Swan bought the farm the wheat yielded only 5 bushels per acre. He then commenced to underdrain, stopping all other operations. He put in only six acres of wheat the first year, and this was on thoroughly drained land. It produced more wheat than he got from forty acres the previous year. He did pretty much all the work in two years. The drains were dug by contract at 12½ cents per rod; laying the tiles and filling the drains with plows cost 3 cents per rod; average cost of tiles and cartage, 13 cents per rod; total cost, 28½ cents per rod. There are over sixty-one miles of under-drains on the farm. The hills proved to be wetter than the valleys, and after the work was done it was found necessary to put an extra drain between the other drains on the hills. They are now about 27 feet apart on the high land and double that distance on the low land.

The drains are from 2½ to 3 feet deep. The whole cost was about \$19 per acre. At the present time it would probably cost from \$25 to \$50. Where a man has the capital it is doubtless best and cheapest to drain the whole farm in this systematic manner, but most of us

must drain a few acres at a time every spring, as we can afford it. What we do should be done well. It is not wise to insist on having the drains four feet deep. The depth must depend on circumstances. A four-foot drain will dry a wider area on each side than a three-foot drain, and white tiles are so high this is quite a point. But the great difficulty in most cases is to get a good outlet the necessary depth, without going on to adjoining farms. And in this case it requires no little diplomacy to induce the neighbors to unite in deepening the main ditch and keeping it clean afterwards. I know two or three cases where a system of drains has been choked up and rendered almost useless from this cause. Till we have a law, somewhat similar to the one in Michigan, compelling the towns to keep the streams and ditches clear, deep underdraining will be an up-hill business. One of the most effective drains I have is not more than 20 inches deep at the outlet. As the drains get up into the higher land they are three feet deep, and tap several springs. Of course I would prefer to have the outlet deeper, and there is 13 feet fall from it to the main stream; but I have to discharge into an open ditch that runs through a neighbor's farm, and as this ditch is not more than 20 inches deep, what can I do? Better have a shallow outlet that is free, than a deep one liable to choke up. Mark you, I am not arguing against deep draining. I believe in it most fully, but as things are, it is useless to insist on four-foot drains in all cases. Make sure of a free outlet, and then go as deep as you can. The spring is the best time to underdrain. The land is not so hard; the men, after the comparatively leisure season of winter, are more vigorous and are less likely to get discouraged when they come to a tough spot; and there will be water enough in the drain to enable you to get a smooth and uniform bottom. The water is decidedly the best level.

I wish we had a good hand machine for sowing clover seed. It would not only do the work more expeditiously, but we should not have to give up the work when the ground was in good order, as now frequently happens, simply because of the wind. When the land has been thoroughly cultivated and is in fine condition, five quarts of clover seed and four quarts of timothy per acre is abundant; but many of our best farmers are becoming more in favor of thicker seedling, and a peck of clover seed per acre is not uncommon, and I have heard of farmers who think it pays to sow even more than this, as the clover is so much finer and of better quality. My own opinion is, that more depends on the land than on the amount of seed. There is said to be over 250,000 seeds of red clover in a pound. If we sow five quarts, or ten pounds, on an acre, we put on 2,500,000 seeds, and as there are 43,560 square feet in an acre, we sow about 57 seeds on each square foot.

In a pound of timothy there are about one million seeds. If we sow four quarts, say 3½ pounds, there would be 126 seeds to a square foot. It is evident that if half these seeds grow, we are in the habit of seeding thick enough. Still, there are so many chances of failure that it is better to sow liberally.

We shall all agree on one point: few of us in the wheat district sow enough land to clover. We sow too much barley and oats as summer crops, to precede wheat. The practice is a profitable one, provided we can make the land rich enough. But we take three cereal crops in succession—corn, barley, (or oats), and wheat. We ought in some way to get in another crop of

clover, or, on heavy land, a summer fallow. If land is clean and rich, we might mow clover the first year, for hay, and the second crop for seed; pasture it the next summer, and then plow it up and sow wheat, and seed it down again. If the land could be top-dressed after taking off the clover seed, or early the next spring, it would give good pasture and add greatly to the wheat crop. And by raising large crops of clover we should be able to make rich manure and thus keep up the land.

"I know what I shall do for the next five years," said an enterprising young farmer of this neighborhood. "I shall put in all the wheat I can. That is what pays. Two or three more crops will pay for the farm. Stock is played out." This is quite a general feeling. We shall rush into grain growing as we did into sheep. And the result will be the same. We shall impoverish our farms, and fail to enrich ourselves. Better be content with sowing a less area, and try to raise heavier crops. This is the true policy.

When Mr. Sheldon, of Geneva, bought his farm eleven years ago, he cut 76 loads of hay the first season. He now pastures three times the stock, cuts between 430 and 440 loads of hay of the very best quality, and raises quite as much grain.

John Johnston writes me that he is drawing swamp muck into his sheep and cattle yards, and covering it with litter. Outside his sheep yard there is a low spot into which the liquid from his manure piles runs. He has put 20 loads of muck into it. He says: "I have owned the yard 43 years, and have lost a vast amount of excellent manure from that leak. I could never find muck convenient till this year, and I now draw it 2½ miles. I have got 83 loads home, and if I can get 150 loads this winter and have it heaped up among the yard manures, won't I have a fine lot to apply next autumn?"

If the old gentleman knew that I have thousands of loads of muck within two hundred rods of my horse barn, and that the horse manure, so far this winter has lain in a heap by itself, it's a good Scotch scolding he would give me. "Wont it pay to draw out?" Pay! I guess it would—three times over. "Then why don't you do it?" Why don't you?

Mr. J. says: "Land keeps advancing hereabouts. Mr. Black has sold his farm for over \$150 per acre. Buildings only moderate, and land so hilly that much of it can be plowed only with side-hill plows. I understand the purchaser intends to erect a cheese factory." Willard thinks the cheese business is going to be overdone, and there is some danger of it. Cheese factories are starting up in the wheat sections, and we shall soon be able to export ten times as much cheese as before the war. I mistake the signs of the times, however, if there will not be a vastly greater consumption of cheese at home than formerly.

The true plan, in the grain growing districts at least, will be to combine beef raising with dairying. We shall have grade Short-horn cows that can be readily fattened as soon as they are past their prime as milkers. Having abundance of winter fodder we can adopt this system with advantage to ourselves and to the land.

Why would it not pay us to sow more white clover? True, where the land is well drained and rich enough it springs up itself. And so does red clover. But we do not depend on this. We sow red clover; why not white clover also? For pasture there is nothing superior to it, especially for sheep. There are twice as many

seeds in a pound as of red clover, and a quart per acre, in addition to the usual quantity of clover and timothy seed, would suffice. The expense would be little, and the benefit considerable. But the land must be in fine condition.

It looks now as though men could be hired cheaper this season than last. If we had only more cottages on the farms there would be no trouble in getting good men at reasonable rates. The wages of married men who board themselves are nothing like as high as those of single men who board in the family—taking the cost of boarding into the account. The men are more reliable, and it lessens the work in the house. I have three married men living in houses on the farm, and mean to have another. There is no trouble about finding work enough, even in winter. In many cases we could profitably spend half the winter in drawing muck from the swamps. In hiring, the best way is to give as few perquisites as possible—and as many afterwards as you please. A good man likes to get more than he bargained for, and it will pay to treat him liberally.

Raising rather than Buying Cows.

Two of the best milk farmers of Connecticut said at the meeting of the Board of Agriculture that they bought no cows,—that they could not buy so good as they could raise. We were not a little gratified at hearing this pronounced unqualifiedly, because the contrary practice so commonly prevails. Milk farmers go about to pick up fresh cows in autumn so as to keep their winter supply of milk good, and instead of keeping up their herd from their own calves, either market them as "bobs," or, as they say in the Connecticut valley, "deacon" them, that is, kill and skin them when first dropped. These two farmers, both men of good judgment, experience, and means, cannot afford to buy cows. The question is pertinent,—can any good farmer afford to? We think not. The price at which as good cows as a man may raise should be sold, ought to be so high that one who can raise them cannot afford to buy. It costs as much to raise a poor cow as a good one, and with hay at \$20 per ton that is a good deal. If, however, the cow gives an average of one quart of milk more at a milking for 250 days she will soon make good her extra cost. At 5 cents a quart the amount will be \$12.50 a year.

How many good cows be raised with comparative certainty? This is the question. We answer: first, by never using a common, or grade bull under any circumstances, if within 10 miles of a well bred one of any breed. By using a well bred bull one is sure of something definite and good; otherwise there is no certainty at all. Ayrshire bulls are almost sure to impart to their heifer calves a tendency to become deep milkers; Jersey bulls bring butter makers; Short-horns, fine large cows, which, if allowed to come in young, well fed, and milk secretion especially excited, often make very deep milkers; Devon bulls, if from good milking stock, as is true also with the Short-horns, will be the sires of good milk stock.

Opinions have varied in regard to what kind of cows will give the most milk in proportion to the food consumed. Grade Short-horns have had their advocates, and grade Ayrshires theirs. Few of those who sell milk as the most important article of farm produce have hitherto advocated keeping, still less kept, full-bloods as milk producers. Mr. J. M. Wells, one of the

farmers alluded to, is now (January) milking 19 head, chiefly full-blood Ayrshires, and most of them of his own raising. His product of milk is 200 quarts per day. Mr. H. S. Collins milks Ayrshires, Jerseys, and grades, and is changing his herd as fast as he can raise Ayrshire cows to take the place of others.

Short-horn breeders claim that there is no reason why Short-horns should not be as good milkers as Ayrshires. There is but one reason we know of; that is, they have not been bred for milk alone for many years, and have been bred for beef alone, while both the amount and quality of the milk have been disregarded.

Digging Wells in Sand and Quicksand.

We must have water; springs will sometimes go dry, cisterns give out, wells fail, and the more persistent the flow of water is during trying drouths, the more valuable,—the nearer invaluable—becomes the spring or well.

The inquiries published in the last volume of the *Agriculturist* in regard to the best mode of sinking wells in sand have brought out numerous responses, which, now that the frost is coming out of the ground, we give to our readers. The good old way of sinking a wooden base-curb and building up a stone or brick one upon it, is described in slightly varying terms by several correspondents. T. S. Wetherbee, Hammondton, N. J., writes the following:

"Wooden or plank curbs should never be used if they can be avoided, for the water will

to turn off the surface water. One barrel of cement is sufficient for a well thirty or forty feet deep. Use hard bricks, and if the work be well done it will be done cheaply."

Mr. A. F. Damon, of Philadelphia, describes the manner in which the South Americans dig their wells. This is substantially as described by Mr. Wetherbee, except that a rim is nailed upon the base-curb and the bricks laid up inside the rim, and the brick-laying goes on altogether upon the surface, the base-curb being laid flat and the brick-curb laid upon it, at the same time that it is settled into the ground by shoveling out the sand from within the circle.

He says: "Any one wishing to dig a well gives the diameter to a brick-maker, who furnishes him with bricks which are the segments of a cylinder of the required size. This plan was adopted by the Spaniards from the Aborigines, who excelled in pottery work, and whose wells are still in existence." These bricks used to be quite in vogue in this country for wells; but of late, we believe, bricks of the ordinary size and shape ($8 \times 4 \times 2$ inches) are used, a little more care in laying the latter being requisite to secure an exact circle.



Fig. 2.—CIRCULAR BRICK CURB.

Figure 1 represents the base-curb, somewhat broader than described by Mr. Wetherbee, with the addition of the rim described by Mr. Damon. The circles are made of segments of convenient size, cut from plank and pinned together, breaking joints with treenails. Two thicknesses of 2-inch plank, 8 inches wide, will make a base-curb strong enough to settle evenly in almost every soil, even where stones of considerable size occur. Figure 2 shows a base-curb made of eight pieces of plank, first pinned together, and then trimmed with a saw, axe, or drawing knife, to the proper shape. In laying the bricks, they will require a bit of plank to be laid in for a support, at four points in the circle. Figure 3 shows a 2×2 -inch strip sawed full of kerfs, in order to bend evenly to make the rim.

Mr. K. Horner, of Ypsilanti, Mich., describes much the same process as Mr. Wetherbee, but says, when the well is dug to the quicksand or to the surface of the water "then, being sure that everything necessary, such as bricks, pails for baling, if necessary, and sufficient help that is not afraid of exercise, are at hand, and all things ready, we begin to move the quicksand about the size of the ring and throw out what we can to advantage, and then put down the ring and begin to lay the brick as fast as possible, and also to dig out the sand from the inside with a long handled shovel, and never let it rest for a moment from the time the first brick is laid till we get down as far as we wish. Keep adding bricks as it goes down. The more brick the more power there is for the work. In this way we never have any trouble, and all the wood in the water is the ring on which the brick is laid."

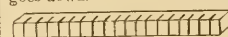


Fig. 3.—RIM OF CURB.

CEMENT TILE WELLS.—Precisely the same principle is carried out in the modern cement tile wells, which are greatly approved where the soil and distance to water are adapted to their use. Cement tiles are made of various sizes and shapes for sewers and drains. The one we represent in fig. 3 is of the size sometimes employed for wells; namely, 5 feet long by

2 feet inside diameter. This gives room for a man, (a small man, probably) to stand in it and fill a bucket with sand. We are curious to witness the process, having recently seen one of them in operation, where it was manifestly superior to any other kind of curbing. Where it can be employed it makes the cheapest, simplest and most durable lining that can be devised. The pipes are made with one end narrowed and the other expanded—like a mortise and tenon. Mr. A. E. Smith, of New Haven Co., Ct., writes as follows: "A kind of tile made in sections 3 feet long, 2 feet in diameter, with rabbetted ends to lock together, is used in this vicinity. A hole is dug and a section placed in the ground; then one man gets inside with a scoop and fills the sand into buckets, which are drawn out by a man at the top, using any simple rigging that may suggest itself. As fast as a section is lowered another is put on, and so on until water is obtained, when the well is completed. I believe the cost in this vicinity is \$5.00 per section, and two men will put down in easy digging thirty feet in two days, making a very cheap and durable well. Of course it can only be used where the digging is easy, and I should think was just the thing for a well in quicksand."



Fig. 3.—CEMENT-TILE CURBING.

Home-made Superphosphate from Bones.

A correspondent who makes a superphosphate from broken bones has this formula: "Add to the crushed bones $\frac{1}{4}$ their weight of oil of vitriol and $\frac{1}{4}$ their weight of water. A convenient vessel for mixing the ingredients in an old whale oil cask sawed in two. These casks are usually made of white oak and yellow pine and bound with very stout iron hoops, and last a long time for this purpose. Any wooden vessel or vat made of good timber would answer the purpose. The breaking of bones is work that I always have upon the slate when there is nothing else to be done. I have a spare shed with a hard dirt bottom and a piece of rock in the middle for an anvil. The big bones and hard joints are crushed on this with a heavy steel sledge, and the softer and smaller bones are pounded with a lighter hammer. Of course it costs a good deal to work bones up in this way, and perhaps it would not pay to buy bones at 15 or 20 dollars a ton for this purpose. But I hire boys to pick them up about the neighboring village for 25 cents a barrel or less, and get them of the butcher for about the same price. I use these broken bones very freely in planting trees, and the surplus I work up in the oil casks with the oil of vitriol. I put the finest of the bones into the tub, then pour in the water, and add the oil of vitriol last. I stir the mass with a short pole briskly at the time of mixing and several times a day as long as it remains in the tub. It takes much longer for such coarse bones to dissolve than for bone-dust; if I do not wish to use the fertilizer immediately I allow the mass to remain two or three weeks. I then take out the paste and what of the bones are left, and mix them in the compost heap which has been made for that purpose, if I desire a fertilizer for spreading

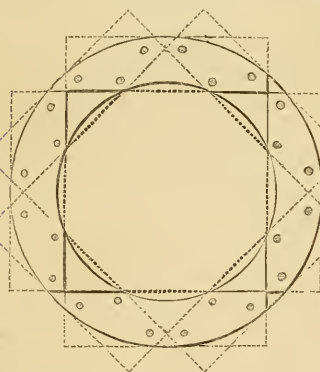


Fig. 1.—BASE-CURB OF RECTANGULAR PLANKS.

vary in light in the best of wells, and a portion of the crib will at times be exposed to the air. Decay must follow, and on the rise of the water, the bad effects of the rotten wood will soon be perceived both in its taste and healthfulness. Where a stratum of quicksand overlays the water, and the well can be dug, it should be sunk just to the water and the bottom made perfectly smooth. Then cut two circles of board four inches wide, nail them firmly together in such a manner as to make a strong rim; place the circle level in the bottom of the well, lay brick in cement upon the rim and proceed to build the brick work, filling every crevice with cement, if you wish to have a perfect well. Build your wall thus to the height above the surface of the ground that you desire to have depth of water in the well; then sink the whole by digging out directly in the centre. The sand will flow in equally from all sides and the wall will settle evenly. When sunk to the required depth, brick up the well to the desired height above the ground; at all events, sufficiently

broadcast. If I want it for use in the hill or for application to growing plants I dry the paste with sifted coal ashes, dried peat, or any convenient absorbent. Any small pieces of bone left in the fertilizer will be certain to do good after the first year, and that which is fine will benefit the crops immediately. I have never made an accurate experiment to test the value of this fertilizer in comparison with others, but am well satisfied that I get my money back, and at the same time keep the land improving."

We have no doubt this is a very safe way for small farmers to work up all the old bones they can buy at cheap rates. For men of capital it would be safe to buy ground bones, if they can find a pure article, or the phosphatic guanos and make their own superphosphate. We trust any of our readers who make the experiment will report their process of manufacture and the results of the application to the various crops.

Planting Potatoes in March.

Potatoes planted in March are usually subject to cold weather, great dampness of the soil, and a succession of checks before the sprouts reach the surface; and after this the young plant is liable to freezing and thawing and soaking to which it is hardly fair to expose it. It is a grand thing to finish up potato planting early; and it is work which may frequently be done when nothing else can be. If we use choice seed and wish to make it go as far as possible, we are tempted to cut it in single eye pieces for planting. Doing this, with most varieties, we would be likely to lose half the seed,—perhaps more, early planted. It would be otherwise if the planting was to be done in May. Good sized pieces, or medium sized potatoes planted whole, are much the surest to give a good set if planted in March. The cutting should always be done several days before planting, and the heap turned over, or spread thin, to dry somewhat. An incrustation of the starch and juices of the tuber, called healing, takes place which defends the piece against decay. The best results are obtained in planting the potatoes about three inches deep in drills, on dry, gravelly loam.

Experience with Sick Poultry.

Accounts of the successful treatment of well described diseases of poultry, in the present state of our knowledge on this subject, are very welcome. The troubles of a Colorado correspondent have brought the following communication from "A. H. T." of New Haven, Conn.:

"I once had an experience somewhat resembling that of Mr. Page, of Colorado, detailed in the January number. My hens refused their grain, but sought assiduously for drink. On examining them I found their mouths, tongues, and as far down the throat as I could see, covered with thick white spots, a yellow, feculent matter running from the mouth. Each hen that appeared diseased I took from the yard and tied with a string to a brick. Thus she could have nothing but the grass to pick and no water. Not having access to an apothecary's I obtained the rust from an old weather-beaten stove and some iron hoops, and making it into pills of the ordinary size, I gave her three a day. For diet she had fresh meat cooked with a little boiled rice, and for drink, milk with alum dissolved in it. And although I was three weeks curing my worst case, at the end of that time I had the gratification to find my hen singing, and fit to return to the yard.

I will relate another experience of later date. I found two hens on the roost blind, or nearly so, in both eyes, their mouths and bills covered with hard white bunches, a thick coating in their throats, looking just as diphtheria in a human being. They were so far gone I could do nothing for them but to put them out of their misery. One after another was similarly attacked, until about thirty of my hens came under treatment. I lost twelve of this number. My treatment in regard to the iron was the same, but I removed the thick white coating from the mouth by dusting in finely pulverized loaf sugar. I washed their eyes, which in some cases were nearly closed, and sometimes swollen out as large as a small marble, with warm milk and water. In two cases the eye came entirely out, leaving the hens blind on one side. They were fed twice a day with bread cut in narrow strips and put down their throats, as not one could eat or drink of herself. Their drink was milk, warmed, and cayenne pepper put in it. This also had to be poured with a teaspoon into their mouths. The breathing of some of these fowls was so loud and hoarse that it could be heard at a considerable distance. Some of the hens were under treatment for a month, and were sick more or less all the winter. I could find no reason, except that, in the fall, their yard was rendered more damp and cold than usual, by frequent rains. Their food was the same as usual and the water in their trough renewed every morning. This season they have been kept from this yard, and no disease has appeared."

This disease seems very like some forms of Roup, for which we have known active stimulating treatment in the first stages very efficacious. Bread soaked in ale and sprinkled with cayenne pepper, and tincture of iron in their drink, are usually successful remedies.

Fixed Foothold for a Fan-Mill.

Barn floors are somewhat uneven, and fan-mills have not weight enough to stand steadily when turned with a strong arm, to give a forcible blast, so they slide and dance about unless fastened by cleats or otherwise. Mr. Ellwood Hughes of Fowlersville, Penn., who thinks farmers reading the *Agriculturist* ought to contribute their good ideas to its columns for the benefit of all, sends us the following description of an attachment to his fan-mill, which he finds of great service: "A bar of round, $\frac{1}{2}$ -inch iron long enough to turn a short handle above the top of the leg of the fan-mill, has a thread cut at the bottom and passes through a nut fastened at the bottom of the leg. The end of the rod is sharpened to a point so as to take hold in the floor, and the top passes through a staple in the top of the leg. Such a rod should be attached to two of the legs of a fan-mill, so that they may be turned down to take hold in the floor. Thus the mill will retain its place while in use and stand

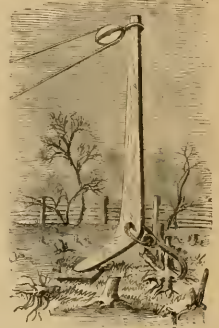


FIG. 2.

level, no matter how uneven the floor. When one has done using the mill the rods may be run up, and then the mill will slide smoothly over the floor." Figure 1 shows a portion of the fan-mill with the rod attached, and fig. 2 gives the screw at the lower end of the rod with the nut.

A Handy and Powerful Lever.

In working in soft ground, whether at pulling stumps or moving stones, the great want is a firm place to set the lever. We exhibit in the accompanying engraving a lever, which requires a very simple base, and if rigged with a pulley, or "block and tackle," as shown, may exert a great lifting power. For such lifts a crooked lever has many advantages. We witnessed, a short time since, the operation of such an one, and were struck with its utility. The ring to which the powerful inch-iron hook is attached should perhaps pass through the bar closer to the inner angle than is represented. It might equally well be made so as to slip over the bar and hold in a notch on the inner side. Such a lever may be seven to nine feet long, and made of oak or hickory. It may be operated by hand, by attaching the upper end of the rope to a stump and pulling down upon the lower end; or by horses or cattle, by fixing the lower end and carrying the upper one off to where the team may be conveniently and efficiently used.



HANDY LEVER.

Flavor and Firmness of Texture in Cheese.

BY T. D. CURTIS.

The chief complaint for the last two years against American cheese in foreign markets—and, indeed, against cheese everywhere—is *bad flavor*. This, more than any other subject, occupied the attention of the American Dairymen's Association, at its late Convention, in Utica.

To achieve the best results the cows must give rich, sweet milk. They must be kept healthy and hearty, during the winter, on good wholesome food and pure water, and in clean, well-ventilated stables. By keeping the cows healthy, we avoid beginning the season with a flow of thin or diseased milk. During the season of pasturing, the cows should feed on dry upland pastures, free from all offensive herbage, with access to pure water. They should be milked in a clean place in a cleanly manner, the milk carefully strained, and deprived of its animal heat as soon as possible, and be constantly exposed to the open air. The "milk things" should all be made of tin, and washed, scalded, and aired thoroughly, every day. If carried to a factory, the milk should be protected from the influence of the sun's rays falling on the can by having some kind of awning stretched over the wagon. Then, after the milk producer has done his part of the work well, he has a right to demand satisfactory results from the cheesemaker, in whom the most scrupulous neatness is no less a virtue than a duty and a necessity.

The milk, pure, sweet, clean and cool, should be heated rather quickly, but evenly, to 82° in warm weather, and 86° in cool weather. The coloring, which should be selected for its fineness and purity, rather than for its cheapness, is then added, and after this sufficient prepared rennet, (thoroughly incorporating it with the mass,) to begin coagulation in ten to fifteen minutes, and form a firm curd in half an hour to an hour, gently agitating the milk until it begins to thicken. The rennets should be taken from healthy calves, not less than three or four days old, cleaned by wiping and picking instead of washing, thoroughly rubbed with the purest salt outside and in, and packed in stone jars—never in wood. They should be prepared for use by soaking and rubbing in whey, first boiled and skimmed, and the preparation carefully strained into a clean stone jar.

As soon as the curd will break square and clean across the finger, the cutting should begin. The knife recently invented for cutting the curd horizontally should be first used; and then the curd should be cut perpendicularly with a gang of blades standing not over a quarter of an inch apart. Both these cuttings should be lengthwise of the vat, and will leave the curd in long strips about a quarter of an inch thick and three quarters of an inch wide. The object is to facilitate the separation of the whey, which the horizontal cutting does more effectually than the perpendicular, since the whey collects in little tubular cells, which, when viewed with a microscope, look like fine needles standing upright throughout the mass. The horizontal cutting severs them crosswise, while the perpendicular splits only a few of them. As soon as the whey has exuded enough to nearly cover the surface of the curd, cross-cutting should commence, and be continued until the whole is as fine as kernels of corn, or beechnuts. Then apply the heat and raise the temperature steadily and expeditiously to 98° or 100°, as is preferred, constantly but carefully stirring the mass with a rake to keep it from packing—the more effectually this is done, the better—and the stirring must be continued, at short intervals, so as to keep the pieces loose and free, until the curd is ready to dip.

It is very essential that all the whey should be expelled from the pieces of curd by the action of the heat and rennet, so that, when mashed by rubbing between the thumb and fingers, they will look mealy and dry. This is what cheese-makers would call thoroughly "cooked" or "scalded"—and it cannot be properly done unless the curd is cut fine, and the heat is kept up till this condition is attained.

When the whey begins to change, or become a little sour, it should be at once drawn off and the curd stirred and cooled to at least 90°. Then dip and salt with four to five ounces of Onondaga "factory filled" to each hundred pounds of milk worked up. Thoroughly incorporate this with the curd, which should be put to press at a temperature of about 80°. Press lightly at first, steadily following up the pressure, until the whey is completely expelled and the whole is firmly set together. When the pressing is finished, put the cheese in an airy, clean, well-ventilated drying room, so constructed that the temperature can be kept at 70° to 80°, and if everything has been thoroughly done, at the end of thirty days the maker can have the satisfaction of "trying" a fine-textured, firm, mild, clean-flavored cheese.

This is as things should be. They often are as they should not be. Milk is often sour or tainted when it reaches the factory. Sometimes

the night's milk does not keep as well as it ought, in hot weather. Tainted milk is the chief cause of porous cheese; sour milk causes a great waste of butter. When caught with either of these objectionable articles, it is important to know the best that can be done with them, but it is unreasonable to expect them to make as good cheese as perfectly sweet milk.

If milk is tainted, the sooner it is heated, set and scalded, the better. Additional heat of three to five degrees, in this case, will prove beneficial. The "cooking" checks decomposition and the further development of gases. But, in addition, the lactic acid should be allowed to fully develop in the whey, making it unmistakably sour, before being drawn off. This acid curdles or pickles the albuminous matter, which is believed to give the offensive odor peculiar to tainted milk. When the whey is drawn off, the curd should be cooled down to 80°, then dipped, salted and put to press, under at first light, but gradually increasing pressure. The curing requires no particular care, save to puncture the swelled places which may appear on the cheese, and let out the gas. Such cheeses are generally buttery and rich, but do not keep very well for a length of time.

When milk is rather old or a little sour, the sooner every stage of the process is gone through with, the better—for the more time there is consumed, the more acid is developed and the greater the waste. The effect of the acid is to destroy the coverings of the globules of butter, allowing the butter to escape and run off with the whey. In sweet milk, these coverings are smooth and perfect, and will bear a temperature of even 170°, without rupturing and freeing the butter. But when the milk is sour, the sacks containing the globules of butter are rough and broken, and are destroyed by a heat much less than that necessary for the manufacture of cheese. Hence, the trouble with sour milk is to give the rennet and heat sufficient time to do their work of separating the cheese from the whey, the acid compelling the operator to take out the curd underdone, the consequence of which is a "leaky" as well as a sour cheese—and almost every sour cheese is a leaky one. It will be seen, therefore, that the more rapidly the heat is run up, the better—even to the temperature of 105° or 106°—the main object being to "cook" the curd, too much acid being in already. Of course, the cooler the curd is put to press and the more carefully it is pressed, the less the waste of butter, which is likely to be enough to produce a dry cheese, under the best that can be done. The writer has seen a very fair quality of cheese made from nearly lopped milk, the whole process of setting, cutting, scalding, and dipping, not occupying more than half to three-quarters of an hour. There is no trouble in keeping a sour cheese almost any length of time.

The practice in many factories is to heat up a curd very slowly, some stopping at a certain point, and letting it stand to—what? Few have any idea what; but the result is, if the milk is not very sweet, that the acid develops before the heat and rennet have done their work, and the choice is between a sour cheese and one from which the whey is imperfectly separated and is likely to be bad-flavored. Many, too, dip the curds too soft, with the idea of producing a greater weight of cheese; and to this foolish ambition to please the patrons with a "big average," may be attributed much of the bad flavor complained of. But unless the cheese is marketed before it is thoroughly cured, no greater weight will be secured; and if thus

secured, a minute of the loss by shrinkage is made of every lot of cheese, and that will be taken into consideration by the dealer the next time he visits a factory noted for selling green cheese—so that what is gained in weight is ultimately lost in quality, price, and reputation.

We emphatically protest against pig-styes around factories, and against imperfect troughs or sewers to conduct off the whey and slops—which being allowed to collect and rot, and exhale their bad odors under, around, and through the factory, taint the cheese, poison the air and everything and everybody it envelops.

Timber Culture—The Pine.

BY D. C. SCOFIELD, ELGIN, ILL.

The Pine forests which once existed along the valleys of the Hudson and its tributaries, the Delaware and Susquehanna, have been swept away, mainly within the last sixty years, to supply the markets of our seaboard. Lumbermen have resorted to the vast forests of Maine, Canada, and our Northwestern border, too, and notwithstanding the greatness of the supply, the increasing demand will soon use up what now would seem to be an exhaustless resource. The question already is seriously asked: "What is to be the substitute which will equal Pine timber in value?" We reply, there is none. Then what is the duty of this generation in regard to this matter? We say, plant Pine timber and make it a farm crop. On the same principle that the provident father provides for the present luxury and future wants of his household, let the men of this time provide for the necessities of future generations. A great and wise people are looking to a glorious future; hence they secure the most durable material within their reach, for their public edifices, State-houses and churches. So also it becomes such a people to provide for the future supply of timber. This may be done by individual enterprise, by Government, or by both. The most natural and economical method is, that every farmer set apart a portion of his land for a timber plantation. It may be set in a belt for protection to exposed grounds against the severities of winter, or in square and more compact bodies, as may suit his taste or convenience. Unlike many other varieties of American timber, the Pine does not sprout from the roots, and can only be reproduced by planting the seed.

It is no longer doubtful whether we can raise Pine and other timber with the same certainty and in the same manner as we do apple and other fruit trees. It has been done, it is being done, and it may be done to any desirable extent. To prove that it has been done we have only to refer to the cases where trees have been planted to beautify pleasure grounds or afford a shade to springs of water. This evidence is sufficient for our purpose, for what has been accomplished on a small scale may be done on a large one. A Pine tree is now standing in the State of New York, not fifty miles from the metropolis, that when set in 1813 was a small plant not two feet in height; it now has a diameter of more than three feet and a height of nearly eight feet. Another Pine tree is standing (unless recently removed) in Fairfield County, Ct., nearly a hundred feet in height, more than three feet in diameter at its base and about one foot in diameter at the height of seventy feet. It was planted there, a small tree, about the close of the Revolutionary war. In the County of Albany, N. Y., a Pine tree was cut in the year 1814 measuring more than two and a half feet in diameter at its

base, of a growth of less than sixty years, making more than one thousand feet of lumber. So much for what has been done, and we might multiply cases if necessary.

That Pine timber is now being successfully grown in both Europe and America is too well known to require other evidence. On my grounds, which were planted in the year 1857 with plants not twelve inches long, now stand Pine trees twenty-five feet in height and from eight to ten inches in diameter at the base or collar, which promise at no very distant day to afford a remunerative crop of lumber.

Where young trees are set for belts for protection, or in blocks, they should stand twelve feet apart each way in the rows and be cultivated till they will protect themselves from the growth of exhausting vegetation.

Tomatoes—Keyes' and Others.

The tomato is so important a vegetable, and the comparative earliness of the varieties is so important, especially to those who cultivate it for sale, that we feel no apology is needed for giving so much space to it. In the controversy now going on concerning the varieties—the Keyes' especially—we have endeavored to give both sides a fair hearing, and now give opposite results, obtained by two different cultivators. It should be borne in mind that last season was, at the East, very unfavorable to the tomato, and while it is not right to come to a conclusion from the experience of a single season, it is still less fair to allow the results of an adverse one to decide the matter. "J. T." Paterson, N. J., writes:

"The article in the Dec. *Agriculturist*, entitled 'Improvement in Tomatoes,' it seems to me, does not come to a correct conclusion in regard to the quality, earliness, and productiveness of the kinds named. I have raised tomatoes over fifteen years, never less than three or four kinds, and oftener twice that number, and considered the Early Smooth Red the earliest, and Valencia Cluster and Lester's Perfected, the best of later kinds. Reading Mr. Gregory's advertisement in your paper last winter, I wrote and obtained from him (with other seeds)—some Early York, (which he claimed to be earliest), and early Tilden seed. Shortly after, reading Hovey & Co.'s advertisement, I wrote and procured from them a paper of 'Keyes' Early Prolific' seed, and also procured in New York, seed of Early Smooth Red. I planted seed of each, (Early York, Early Red, Tilden, and Keyes'), in same hot-bed, gave same treatment, transplanted the plants into cold frame about the same time, and into open ground as soon as warm weather became settled. The Early York, Early Red, and Tilden, were set out in my earliest ground, and some days afterwards (having but few plants, from a very small paper of seed, and it being claimed) they were a month earlier I set out the Keyes' plants in my garden, on lower and later ground, in order to keep them pure and save plenty of seed. The Keyes' still proved from one to two weeks earlier than the others, though in a less favorable location. My experience was similar to that of Mr. Dowling and others published in your paper some months ago. The Early York came next, then Early Red, then Tilden. My plants of the Keyes' were very stocky, leaves very broad, looking more like potato than tomato leaves, bore transplanting well and were very prolific, continuing to bear, and full of green ones when frost killed the vines. The Keyes' tomato is of medium size, of very dark color, more crimson

than scarlet, solid and of good quality, grows in clusters, which ripen pretty evenly and color all over at once, not being ripe below and green around the stem, as with some varieties. The only objection I found was their vigorous growth and sprawling habit. The stalks, being heavy, soon fell to the ground and grew several feet long, some of the plants, I think, covering a space of over six feet square. Perhaps my low, rich garden ground had something to do with it; still, I am satisfied they need more room than most kinds—say rows four feet apart, and plants three feet apart in the row. Probably twice as many plants of the Early York (which is a fine tomato of a dwarf habit) might be planted to the acre. The Keyes' tomato is certainly a distinct variety, and from one year's experience, I think it worthy the attention of all who want early tomatoes. The Tilden is also a fine tomato, but not very early, in color and quality resembling the Valencia, both ripening slowly, and being more tart than most other varieties."

On the other hand, Mr. James Perkins, market gardener near New Market, N. J., thinks his New York Red as early as any of the much praised varieties, and proposes next season to send his first ripe fruit to the office of the *Agriculturist*. He asks those who have new varieties to do the same—the plants not to be kept under glass after May 25th. Come on with your early tomatoes, gentlemen.

Pear Culture for Profit.

The frequent inquiries made with regard to pear culture show that the attention of cultivators is turned to this fruit, as a market crop. The demand for fine varieties has been so much greater than the supply that the fruit in our city markets has always been at a price far beyond the reach of those of ordinary means. The fruit is temptingly beautiful, but from 5 cents to 25 cents apiece is too much for the majority of pockets. The question generally put by those who are thinking of planting pears is: Shall I plant standards or dwarfs? Our reply is: Standards, by all means, with perhaps the single exception of the Duchesse d'Angouleme. The dwarf pear, i. e. the pear on a quince stock, has done good service, but not in the orchard. As these trees come early into bearing, they have enabled us to test a large number of varieties, in a much shorter time than could have been done if the dependance had been on standards alone. For garden culture, and for those whose space is limited, nothing can be better adapted than the pear upon quince; here large and paying crops are not looked for, and the trees receive all the care and culture they require, and without which they soon become useless. It is claimed by some, that if planted deep enough to cover the union of the pear and quince, roots will be produced from the pear wood. This is undoubtedly the case with many varieties, and when it takes place, the tree is no longer a dwarf, but is a pear tree on its own roots, with a clump of decaying quince roots in contact with them, and which we would much rather not have there. The chief objection urged to the pear on its own roots is the length of time before it comes into bearing. This is a condition which varies very much with the different kinds. Some, like the Dix, make one wait a provokingly long time, but the most profitable market varieties are not open to this objection. Had the many plantations that have been made of dwarf trees been of standards the fruit would now be much more plenty than it

is. While the dwarf tree has done much to improve our knowledge of pears, we think that it has been detrimental to pear culture. Some twenty years ago the quince stock was so strongly advocated, that many supposed that the finer sorts of pears could only be grown upon it. We now find very few who recommend its use in an orchard planted for profit.

A good soil, one that will produce a fair crop of any farm produce, will do for the pear, and it is none the worse if it is of a rather stiff nature. Draining should be done, if needed, and the ground well prepared by plowing and subsoiling. Mr. Quinn, a successful grower, recommends preparing the land thoroughly and growing a root crop the year before setting out the trees. This is undoubtedly good practice, as the soil not only gets thoroughly worked, but has the advantage of the liberal manuring given to the root crop.

Varieties. There is no task more difficult than to make a selection of varieties of any kind of fruit that shall answer everywhere. We give here a list of those we should set out were we about to raise fruit for the New York market. In this case the question of quality is secondary to that of profit.

WINDSOR OR SUMMER BELL.—An old sort, worthless for eating, but profitable as an early market fruit and always in demand for cooking.

CLAPP'S FAVORITE.—A comparatively new variety, but so far as tested, of excellent character. Its beauty, size, and earliness, will no doubt make it a leading market sort.

BARTLETT.—Nothing need be said of this well known and popular variety. Pomologists may discuss whether it is a second or third rate pear; cultivators know that "there is money in it."

LOUISE BONNE DE JERSEY.—Succeeds generally; sometimes astringent, but its beautiful cheek makes it sell.

BEURRE CLAIRGEAU.—Handsome, large, an abundant bearer, and profitable.

DUCHESSE D'ANGOULEME.—About the only variety found profitable on quince, on which it generally does better than on its own roots.

BEURRE D'ANJOU.—First class in all respects, and keeps well.

LAWRENCE.—A good late autumn variety.

VICAR OF WINDFIELD.—An abundant and regular bearer; excellent as a cooking pear and when well ripened fair for the table, but it is so uneven in quality that it is unpopular in the market for the latter purpose. Cultivators, however, find it a profitable variety.

To this list might be added Seckel, Sheldon, and some others. In planting for market, it is a great mistake to have a few trees of many kinds. The orchard should comprise but a few profitable sorts—such as the people know and will buy, or which by their attractive appearance commend themselves at once. Picking and packing are much facilitated, and the commission merchant has much less trouble with a large lot of one or two kinds, than where there are small quantities of a dozen varieties.

POTATOES UNDER STRAW.—In last month's "Basket," page 46, we gave the experience of "Hoosier" which was not in favor of planting potatoes under straw. On the other hand, Mr. J. N. Sterns, Kalamazoo, Mich., says:

"I fitted the ground as for planting in the old way, by marking rows one way, three feet apart, and dropped the potatoes on the mark, from eighteen inches to two feet apart, covering them slightly with soil. I then covered to about the depth of ten inches with old straw, and did

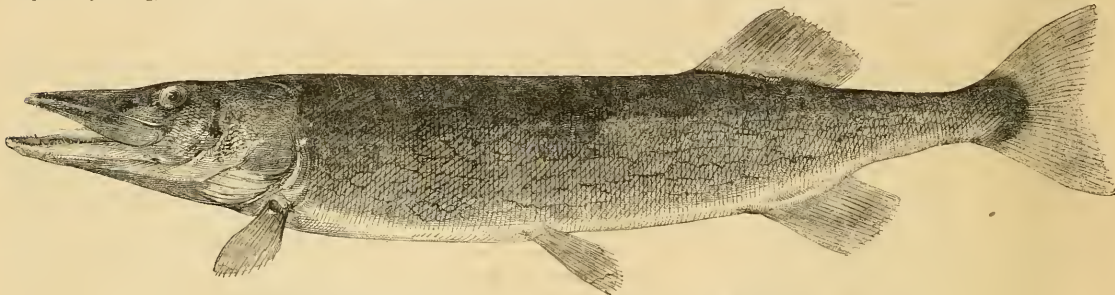
nothing more with them. When the crop was ripe I raked off the straw, and raked out the potatoes, which were mostly on the surface, looking very nice, fresh, and large. The result was, I had at the rate of 186 bushels per acre; in drills the yield from those planted the old way in drills, and cultivated, on ground by the side of them, was only 75 bushels per acre, which was rather small for this section, owing to the dry season. The soil is a sandy loam."

The Common Pickerel.—(*Esox reticulatus*.)

Our artist, Mr. Herriek, challenges admiration for the faithfulness and beauty of his drawing, which has lost nothing in the engraver's hands. It is indeed a difficult task to engrave so delicate a piece of penciling, and retain the indications of

shade off into nearly pure white upon the belly. The scales are small, brilliant, and edged with black, the fins greenish, those below being tinged with red. The body is covered with dusky reticulations, or irregular bands running one into another, forming a sort of network, which vary in size in different specimens. The pike breeds in March or April, as soon as the water becomes a little warm and food abundant, and during the breeding period the colors are exceedingly intense and brilliant. In addition to the tints named there is an iridescence of brilliant hues upon the gills and sides. The light parts are brighter and the dark ones of deeper color; hence we regard the pickerel, especially the male, as deserving to be ranked among the most beautiful of our fresh water fish. The motions of this fish in the water are

great, he usually makes several "tacks," taking a zigzag course. The accuracy of aim of the fish in making these darts is truly astonishing. Few indeed are the fish that can escape. The enormous jaws open and shut like a steel trap, at the moment of striking, and the luckless creature is engulfed in the capacious maw. The pike does not hesitate, however, if the fish he pounces upon is too large for a single swallow. He will, if pressed with hunger, take one nearly half as long as himself; if necessary, first disabling it, and then getting it head foremost into his mouth. After this, little by little, he works it down. Meanwhile he himself becomes almost helpless, as one might imagine,—having a living fish, half swallowed, and actively wriggling in his mouth—and in this condition small pickerel not unfrequently fall an easy



THE COMMON PICKEREL.—(*Esox reticulatus*).—Drawn and Engraved for the American Agriculturist.

the play of colors upon the surface without losing the strength of the more positive markings.

The pickerel or pike is one of our best known fishes. It is a favorite in the market, and with many, of course, upon the table; a favorite, too, with those anglers who are not such thorough sportsmen that they will not favor a fish so easily captured. The pickerel are among the most voraciously carnivorous animals in the world, and being also among the strongest and swiftest swimmers, the weaker fish about them must be both cautious and active to be able to both pick up a living and elude their jaws.

The body of the pickerel is long and slender, and the head is very nearly one-third of the entire length. It approaches a cylindrical form, the breadth and depth being much more nearly alike than in most fishes. The head is broad; the snout, blunt and flat, somewhat like a duck's bill; the under jaw extends beyond the upper one when the mouth is closed. The upper jaw has no teeth upon the sides and only a few small ones in front, but the roof of the mouth and the under jaw fairly bristle with teeth, some of which are quite large. The base of the tongue and the bony arches which support the gills are covered with sharp teeth directed backward, so that anything once within is extricated with difficulty. The colors vary considerably, according to the abundance and kind of food, the character of the water, or other influences, and also according to the sex and time of year. The prevalent colors are deep green, or bluish-gray approaching black on the back and head, while olive-yellow and golden tints mingle with the greenish or grayish reticulations of the sides, and

peculiar. The shape of the body and location of its fins are such as to give it great speed in straight forward motion, and power to stop or turn on the instant. It has, however, no ability to execute those graceful sweeps and curves which make some of the carp family such attractive denizens of ornamental ponds, basins or vases, where their motions can be watched. The pickerel habitually rests perfectly motionless, not a quiver or wave of a fin being visible, except a slight undulating motion of the pectoral or breast fins by which he balances him-

self; then in the twinkling of an eye he shoots away with almost inconceivable rapidity—so great that the eye can hardly follow him—and stops stock still perhaps at the distance of only a few feet, or it may be, rods. If the distance be

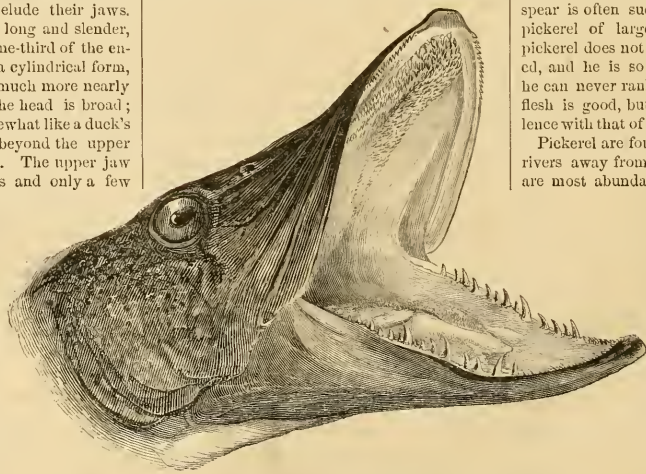
prey to larger ones. The writer once took a large pike from the hook, having in his mouth a small one which had previously partly swallowed the live bait fish, and found all three alive.

The pickerel will take almost anything that is small enough for him to get into his mouth, if it has motion resembling life; hence bits of rags, bone, or painted tin, are used for bait, being "trolled" or drawn rapidly through the water. Living fish as long as one's finger are common bait for set lines, and such are frequently used through holes in the ice. The fish spear is often successfully employed in taking pickerel of large size. Strong as he is, the pickerel does not make a hard fight when hooked, and he is so greedy and easily taken that he can never rank high as a game fish. The flesh is good, but does not compare in excellence with that of the trout, black bass, or perch.

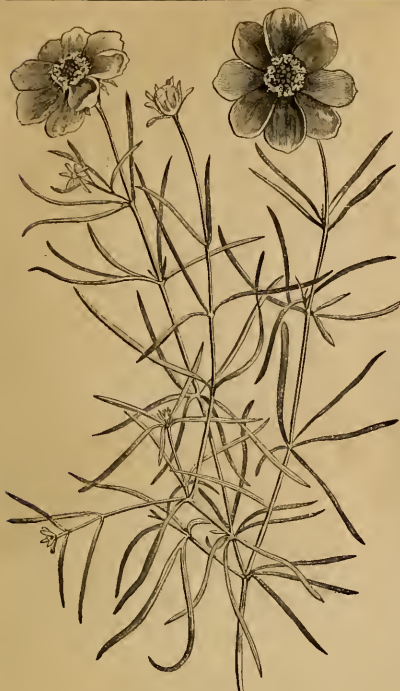
Pickerel are found in most of our streams and rivers away from the influence of the sea, but are most abundant in ponds, where they may often be seen in summer, basking in the sun among the lily pads. The pickerel varies in length, mature specimens being often less than a foot in length, and sometimes reaching the enormous size of three feet. The bodies of these very large ones are usually much more robust than others. The engraving which we present is an accurate portrait of a fine large fish, taken by the artist himself.

Its extreme length was 25

inches. The head was accurately drawn from a 4½ pound fish taken from the market, and is represented two-thirds the natural length. Many of the smaller teeth in the lower jaw are not fixed, but seem to be set loosely in the flesh.



HEAD OF PICKEREL.



COREOPSIS VERTICILLATA.

Everybody's Hardy Flowers.

Were we to head this article "Herbaceous Perennials," many might pass it by, as being something that did not interest them; so we have given it a title with the same meaning. Those flowering plants which, while all that is visible perishes, each spring repeat everywhere the miracle of the resurrection, should be everybody's flowers. They need neither potting nor puttering, they endure neglect and return attention, and are the flowers to have and to love.

We have made out a list of those that are good and easily obtained; it does not contain all that may be classed under these heads even, and is by no means a list of the rarest. They can for the most part be raised from seed, but as a general thing do not flower until the second year, though some, if sown early, will bloom the same year.

Novices in flower growing are generally impatient people; they can hardly wait for the seeds of annuals to come up, and as for growing a plant for a whole year for the sake of what it may do hereafter, that is not to be thought of.

Those who are in a hurry can get plants in early spring of the florists and nurserymen, or of some kind cultivator, who, if he is a lover of flowers himself, will be glad of an opportunity to aid another—only don't be a plant beggar.

Plants of this class do best in a good rich garden soil, light rather than heavy; they generally increase so rapidly as to require division every three or four years. Take up the clumps in early spring, or in autumn after the tops are dead, divide by means of a sharp spade or a knife, always observing the manner of growth and making the division in a manner that shall secure buds with the portions of the root. Re-set as much as is desirable and then—throw away the rest? Not at all. With these plants one can cultivate friendly relations and make

many a less fortunate plant lover happy. So give away what can be spared and thus help to make them "everybody's flowers."

AMERICAN COWSLIP.—Shooting-star, *Dodecatheon Meadia*. 1 foot; pale purple; June. Figured in the *Agriculturist* for July, 1866.

ASTILBE JAPONICA.—Incorrectly *Spiraea Japonica* of the catalogues; no common name; 18 inches; white; fine foliage; June. Figured in the *Agriculturist*, Jan., 1867.

BELL-FLOWER.—*Campanula Carpathica*; 18 inches; blue, with a white variety; all summer. This is one of the best of the many Campanulas, being delicate in habit and a profuse bloomer and remaining in flower for a long time. The Peach-leaved Bell-flower and others are good; see seedmen's and florists' catalogues.

BLEEDING-HEART.—*Dicentra spectabilis*. Dielytra of writers who do not know any better; 2 to 3 feet; rose pink; May. Beautiful in foliage and flower, and one of the finest of all plants.

CANDYTUFT, PERENNIAL.—*Deris sempervirens*; 6 to

10 inches; white; July. Excellent for bouquets.

CHRYSANTHEMUM.—Belonging to this are the well-known fall blooming flowers, of such great variety of colors, *Chrysanthemum Indicum*; the Fever-few, with its small white flowers, which is only half hardy; and what are called Pyrethrums, *Chrysanthemum carneum*, of which the double forms are of great variety of color.

COLUMBINE.—Several, and all beautiful, from our common wild one, *Aquilegia Canadensis*, to the rarer *A. glandulosa*, *A. alpina*, and *A. caerulea*.

COREOPSIS.—*C. verticillata*, called *C. tenuifolia* in some of the catalogues. 18 inches; yellow; July to September. While yellow flowers should not preponderate in a collection, some are needed, and we add this to the list as much on account of its finely cut foliage as for any beauty of its flowers. It is found wild at the South and West, and is one of those old garden plants that seem to have found a new appreciation with our florists. Figured above.

EVENING PRIMROSE.—Several species of *Oenothera* are cultivated. One of the best is *O. Missouriensis*, the Missouri Evening Primrose. A low spreading plant, with silvery foliage and an abundance of pale yellow flowers, which are six inches across.

FLAX PERENNIAL.—*Linum perenne*. 18 inches; blue; May to July, and later; graceful in habit, and long in flower. There are varieties differing in the shade of blue and white.

FRAXINELLA.—*Dictamnus Fraxinella*, purplish or white; 2 feet; June and July. An old and favorite flower, with a strong Lemon-like odor.

FORGET-ME-NOT.—*Myosotis palustris*. 1 foot or less; pale blue, with a yellow eye. In a shady place, it blooms nearly all summer.

LARKSPUR.—Some grow as tall as 6 or 7 feet; all are desirable. *Delphinium formosum*, *D. grandiflorum*, and *D. elatum*, are among the best.

LELY OF THE VALLEY.—*Convallaria majalis*.



JAPANESE KNOTWEED.

This well known, graceful spring flower does best in a shady place. Grown from the root.

LYCHNIS.—including the Scarlet Lychnis, Ragged Robin, Mullein Pink, and others—these are not very delicate, but are very showy.

PEA, PERENNIAL.—*Lathyrus latifolius*.—Climber; light purple and white; all summer. This, though a climber, flowers best when allowed to spread upon the ground. An old, well established plant, is a very beautiful object.

PHLOX.—The Moss Pink, *Phlox subulata*, makes a low dense cushion of foliage, covered with flowers in April and May. The taller Phloxes of which the florists have many named varieties bloom from June until September.

SPIREAS.—The herbaceous Spiraeas are few and desirable. *S. filipendula*, the Dropwort, and *S. Ulmaria*, the Meadow Sweet, are white, and the first especially desirable for its fine foliage.

SPRING ADONIS.—*Adonis vernalis*. 1 foot; pale yellow; May; foliage delicate. This is figured in the *Agriculturist* for May, 1867.

YARROW.—Our common Yarrow, or Milfoil, *Achillea millefolium*, is well known as a weed; rose colored and red varieties of it are desirable in the garden. Another, *A. Parmica*, or Sneezewort, is in its double variety one of our best white flowers, and remaining long in bloom.

The Japanese Knotweed. (*Polygonum cuspidatum*.)

The genus *Polygonum*, although a large one, cannot boast of many species sufficiently elegant to be cultivated for ornament. We are familiar with them as plants to be ejected from the grounds rather than to be introduced, for here belong the False, or Climbing Buckwheat, the Black Bind-weed, Smart-weed, Knotgrass, Goose-grass, and others whose common names indicate their weedy character. The *Polygonum*

Oriental, the Prince's Feather, or Ragged-Sailor, a tall species with rather coarse foliage and drooping spikes of rose colored flowers, is often seen in the humble attempts at gardening, in company with Sunflowers, Love-lies-bleeding, and other similarly coarse and weedy plants.

We have for some years known a species which is really worth cultivating, but which does not seem to be much disseminated—the *Polygonum cuspidatum*, a native of Japan. It is a perfectly hardy perennial, which throws up branching stems three or four feet high, bearing large oval leaves, which are long-pointed at the apex,—hence the name *cuspidatum*. The small white flowers are in little clusters in the axils of the leaves, and are succeeded by the fruit, or seeds, which being of a pale rose color are more showy than the flowers themselves. Though the flowers individually are small, they are produced in such abundance and have such a graceful droop that the plant is quite showy in flower and fruit, and its effect is heightened by the reddish color of the stems. The plant increases very rapidly, and soon forms a large clump; indeed this is its greatest fault, and one which unfits it for use in small borders. It is very effective for planting where there is plenty of room, and it will grow in any soil and situation, even under the shade of trees. It blooms in July and August, and continues for a long time. There is a variegated leaved form which is rather curious, but the variegation is not constant.

Laying out an Orchard.

When trees are set equidistant in parallel rows, the land is not laid off to the best advantage. The plan is modified by making the trees in one row alternate with those in the next, a method to which the term *quincunx* is applied. Warder differs from others in his description of quincunx, which he says "is constituted by one central tree surrounded by six, and all equidistant." This is planting in hexagons, and

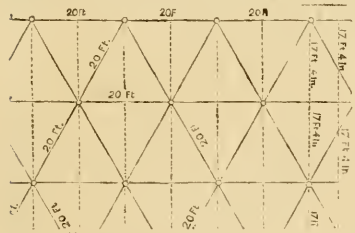


Fig. 1.—PLAN OF THE ORCHARD.

while we regret that Warder should have given to it a name that is likely to lead to confusion, we quite agree with him that it is the plan upon which the greatest number of trees can be set upon an acre and all be at equal distances.



Fig. 2.

The trees are set at every alternate intersection of the cross marks with the longitudinal ones. The accompanying diagram, fig. 1, will show the arrangement, and it will be seen that each tree is at the corner of an equilateral triangle, and is also at the centre of a hexagon, formed by six other equidistant trees.

Mr. Nathaniel Hill, Pleasant Hill, Ohio, has another way of arriving at the same result. He uses a triangular wooden frame as a guide. The frame, fig. 3, is made of two strips of plank placed so as to form two sides of a triangle of the required length, and provided with a cross piece to keep it in shape. In laying off an orchard, but one straight line has to be marked for a base line and the distances for the first row

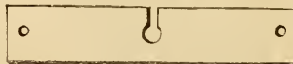


Fig. 3.—PLANTING GUIDE.

staked out upon this. By placing the two arms of the frame at the stakes of the first row, the places for the trees in the second row are indicated by the point of the frame, and so on.

Mr. H. sets his trees 30 feet apart, and though it requires three men to move the frame, he thinks it less trouble and more accurate than any other method. Whatever plan may be preferred for laying out the orchard, it is best to mark the position of every tree by a stake before commencing to plant. In this way all inaccuracies may be remedied with much less trouble than after the trees have been set. Some years ago we figured a planting guide, the use of which will insure the placing of the tree in the precise position occupied by the stake. It is a board, 8 feet long, fig. 3, with a hole at each end and a notch in the middle. Lay this on the ground with the notch at the stake, drive a pin into the ground through each hole, and lift the board off, leaving the pins in the ground. The stake may be removed, the hole made; when the board is placed again on the pins the notch accurately indicates where the trunk of the tree should stand.

Market Gardening around Philadelphia—What Vegetables are Grown.

BY HENRY A. DEER.

[In response to a request for a list of the seeds in demand by the Philadelphia Market Gardeners, Mr. Deer communicates the following. Where the varieties differ from those popular with growers for the New York markets, we add those preferred by the latter, in brackets. The list in this way will present at a glance the varieties approved by the two largest market gardening communities in the country.—Eds.]

Philadelphia has long been noted for its superior markets, and particularly for the profusion and quality of the vegetables found in them. The market gardeners of Philadelphia are a thrifty, industrious, and honest class of people, not much given to "book learning," but intelligent enough to know what pays best to grow, and how to grow it. That portion of the city known as the "Neek," (being the strip of land below the built-up portion of the city lying between the Delaware and Schuylkill rivers,) has from time immemorial been occupied as "Truck Farms;" and here many of the descendants of the original settlers, (Swedes and Germans) still live, although the march of improvement is rapidly encroaching upon them, and has already driven many of them to other localities around the city.

In no one thing are our gardeners more fastidious than in the selection of their seeds. They want the best, and are willing to pay for them; they are great sceptics, and slow to experiment with new sorts, preferring well tested, old varieties. They are also very careful in saving many of their own seeds, and have a strong prejudice against many of the imported varieties.

The following is a list of the leading kinds grown by them for the Philadelphia market.

ASPARAGUS.—*Lesher's Mammoth*; to grow to perfection must be planted four to five feet apart. [*Giant*; more depends upon the cultivation than upon the variety.]

BEANS.—Dwarf or snap; for early, *Early Mohawk*; for general crop and late planting, the *Valentine*, which we consider the best. [*Early Valentine* for early, and *Refugee* for late.]

BEANS.—Pole or running. *Large Lima* for shelling, and *Giant Wier* for a snap bean. The latter is popular in our markets, but the supply has not yet been equal to the demand.

BEEF.—The *Early Bassano*, known as the "Early White Beet," is superseded by the *Simon's Early Red Turnip Beet*. It is quite as early, much better shaped, dark colored, and is the most extensively grown of any, not only for early, but in later planting for late use. The *Half-long Blood*, known also as the "Baltimore Beet," is also largely grown. [*Short-top Round*, *Early Blood Turnip*, *Long Smooth Blood*.]

CABBAGE.—*Large Early York*, *Early Wakefield*, *Early Winningstad*, and *Early Flat Dutch*, follow in succession; the *Large Early York* is, however, the leading sort. These varieties are sown in September and wintered in cold frames. The *Philadelphia Drumhead* and *Flat Dutch* are sown in the spring. Of these our gardeners will use no other but home-grown seed, they have been so often deceived in imported seed. [*Early Wakefield*, *Jersey grown seed*, preferred for early; *Flat Drumhead*, *Late Bergen*, and *Drumhead Savoy* for late.]

CALIFLOWER.—*Early Paris*, *Le Normand*, and *Witchaven*. [*Early Erfurt* for early; *Thorburn's Nonpareil* for late.]

CARROT.—*Early Shorthorn*, *Scarlet Horn*, *Long Orange*.

CELERY.—*Turner's Incomparable Dwarf*, and *White Solid*. Philadelphia growth is preferred; the imported seed is apt to produce hollow stalks. [*Dwarf* sorts usually grown under the names of *New Dwarf*, *Incomparable Dwarf*, *Early Dwarf*, *White Solid*, etc.]

CORN SALAD is very extensively grown for early spring use. It is sown in September, and covered in the winter with a sprinkling of straw.

CORN, INDIAN.—*Adams' Early*, only salable until the *Eight-ripped Sugar* and *Evergreen* appear in market; the former being hardy can be planted much earlier than the others. [*Early Darling*.]

CUCUMBER.—*Early White Spined*, for salad, and the *Long Green*, for pickles.

EGG PLANT.—*Large Round Purple* (prickly stem) is preferred. [*New York Purple*.]

ENDIVE.—*Green Curled* is the popular sort.

KOHLRABI.—*Early White Vienna*, and for late, the *Large White*.

KALE OR BORECOLE.—The *Dwarf German* and *Scotch* are sown in the fall, and slightly covered during the winter for early greens.

LEEK.—*Large Plug* and *Large Musselburgh*.

LETTUCE.—For early heading, the *Early Cabbage* and *Brown Dutch*; later use, *Royal Cabbage* and *Curled India-head*. The latter the best for early summer use. [*Early Simpson*, a variety of the *Curled Silesian*, preferred for early.]

MELONS, MUSK. are principally grown in New Jersey for our market. The leading kinds are *Jenny Lind* for early; *Netted Citron*, *Pine-apple*, *Nutmeg*, *Turks-cap* and *Persian* for later, and follow in the order in which they are named.

MELONS, WATER. are also grown in New Jersey. The favorite variety is the *Mountain*

Sweet, known also as the "Ice Cream;" the true Ice cream is, however, quite a different melon, the seeds being *white*, and the flesh of a much paler red. [*Mountain Sprout.*]

OKRA OR GOMBO.—*Deaf Long Podded* is extensively grown, and more popular every year.

ONION.—Our market gardeners confine themselves to two sorts, the *Large Yellow Strasbourg*, and *White or Silver Skin*, and these must be grown from *Philadelphia* seed, or they cannot produce the beautiful hard little sets, or buttons, which can be grown nowhere to such perfection as here; immense quantities are raised.

PARSNIP.—*Large Sugar or Hollow Crown* is the leading sort. [*Student* is raised to some extent.]

PEAS.—*Extra Early*, known also as "Landreth's Extra Early," "Dreer's Extra Early," "Hancock's Early," is the leading sort, and the names of different growers are attached to designate it. It is peculiar to the soil and climate of New Jersey, and I believe the seed can nowhere be grown to produce such early crops as on the light sandy soils of New Jersey. The great object with a market gardener is to get a pea that will blossom nearly all at one time, so as to set evenly, that the crop may be gathered in a few pickings; this the New Jersey grown peas will do. They are therefore sought after by all extensive growers, and immense quantities are grown to supply the pea growers in other sections; our market gardeners will buy no other seed if these can be had. They are also planted towards fall for a late crop. The following varieties are also more or less grown: *Blackeye Marrowfat*, *Blue Imperial*, *Champion of England*, and *Eugenie*. [*Daniel O'Rourke.*]

PEPPER.—*Large Sweet Bell* for stuffed pickles, *Tomato-shaped Cayenne*.

RADISH.—*Long Scarlet Short-top*, *White and Red Turnip*, *White Summer*, *Yellow Turnip*, *Black Spanish*.

SALSIFY OR OYSTER PLANT.—The home-grown seed preferred to the imported.

SPINACH.—*Round leaved Savoy* extensively sown in the fall for early spring use.

SQUASH.—*Early Bush*, *Long Green Crookneck*, for summer; *Hubbard* and *Boston Marrow* for winter use.

TOMATO.—*N. J. Extra Early*, *Large Smooth Red*, *Tilden*, *Cook's Favorite*, *Fige*, are all more or less grown, much depending on the locality and the time they are wanted for market. The *Tilden* and *Cook's Favorite* are great favorites in our market, as they are both solid, smooth, and of a beautiful red color. The *Cook's Favorite* is also extensively grown for late use, canning, etc. For this purpose the plants are set out about the 1st of July, and upon the approach of frost the unripe fruit is picked and ripened under glass; we have kept them in this way until Christmas. It is folly to condemn a variety as worthless, as so much depends on the season, soil, and climate, as well as the seed, of which so much of a worthless, mixed quality is yearly offered.

TURNIP.—*Early White Flat Dutch*, *Purple-top Strap-leaved*, and *Purple-top Seede* or *Ruta Baga* are the only kinds grown to any extent.

CATALPA KEMPFERI.—This Catalpa is a great improvement on our common species; it is hardy, and forms a neat, small tree, with a regular, spreading head. Mr. Meehan, in an article in the Horticultural Annual, mentions this species, and says, that he never knew it to bloom. It has bloomed for several years with Mr. W. S. Carpenter, in Westchester Co., N. Y.,

and is ornamental in foliage, flower, and fruit. It produces its seed pods in such abundance, as to impart a striking character to the tree; they are more slender than those of the common species, and are in clusters of fifty or more.

The Grape Vine—How it Grows and What to Do with it.—2nd Article.

As introductory to a description of the methods of training the vine, we gave on page 62, (February,) some points in its anatomy, which we briefly recapitulate. A growing shoot of a vine is a series of nodes, at each of which is



FIG. 3.—NODE WITH LATERAL.

borne a leaf upon one side, and generally a tendril, or a cluster of grapes upon the other; at the angle where the leaf and stem meet are two buds. These buds are of the greatest importance: one of them is to grow the next year, and lies dormant during the summer it is formed, acquiring strength for its proper development; the other bud pushes the same summer, and forms a small branch in the axil of the leaf. This branch is by vine growers called the *lateral*.

In figure 3 we have the node, and its leaf with the tendril opposite, the larger part of which is removed to save room. Where the leaf and stem join we have the bud, *f*, and a side branch, or lateral. The lateral is an exact repetition of

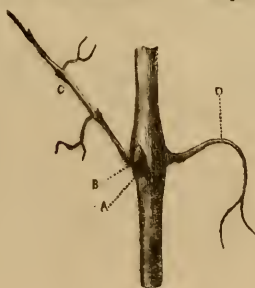


FIG. 4.—NODE IN WINTER.

the stem from which it sprung, and, like it, is a succession of nodes with leaves, buds, etc. In this figure the lateral is shown as broken off at *a*, as will be explained further along, and from its node another lateral has grown.

In autumn the green wood of the vine has ripened and become brown, the leaves having performed their functions spontaneously drop from the node, the tendril dries up, but does not fall off of itself, and the node at this time appears as in figure 4, which we borrow from Mohr. *A* is the scar left by the fallen leaf; *B*, the bud; *C*, the lateral, and *D*, the tendril, or the foot-stalk of a fruit cluster, as the case may be.

In treating of the vine we have thus far employed the terms branch, stem, and shoot, in their common acceptation, for in speaking of plants in general most of us are in the habit of using them to mean much the same thing.

Writers on the vine find it necessary to give them a definite meaning. The growth which prolongs during the summer, while it is still green is called a *shoot*. When the wood of a shoot has ripened, it becomes a *cane*, and when a cane has itself borne shoots which have ripened into other canes, it is then a part of the *stem*.

The shoots all start from buds that have been prepared the year before; in figure 4, the bud *B* will this spring produce a shoot. This will elongate indefinitely, but always consist of the succession of nodes, with their appendages of leaves, tendrils, etc., already described. On a vigorous shoot, the lower nodes, instead of producing tendrils, will bear clusters of grapes, and this is the only place where fruit is borne—on the shoot, the growth of the present year. When the leaves have fallen and the fruit is gathered, what was the shoot is then a *cane*, which can no longer bear clusters directly from its ripened wood. It is furnished with buds, which will next year produce shoots, and these will bear fruit. The cane has a light colored, smooth bark, but after it has passed two seasons, one as a shoot and the other as a cane, it becomes a part of the *stem*, a name which it retains as long as it remains a part of the vine. It has a dark bark, the outer layers of which become loose and spontaneously separate.

It will be seen that the bud is a most important appendage to the vine. Situated at the node, just at the base of a leaf, it is so placed that in its young and tender state it is protected from accident, and it is also where it can be properly nourished by its parent leaf, so to speak.

Much of the energy of the vine is directed to perfecting the bud, which has another year so important a part to play, for it is to become the shoot which is to bear the foliage, the fruit, and in fact to be nearly all that we look for in the vine. A bud, then, may be properly regarded as an undeveloped shoot; its leaves, and even its fruit are prepared beforehand, and the fruitfulness of the vine will depend upon the opportunities that the bud has had for maturing properly. The vine has not, like the pear, peach, etc., fruit buds and leaf buds, but both leaves and fruit come from the same bud.

All the different systems of pruning and training are founded upon the fact that fruit is always produced upon a shoot, or new growth, and they have for their object the perfection of the buds during the season of growth, and the removal of so much of the ripened wood as shall leave a sufficient number of buds to produce as much fruit as is consistent with the general and continued welfare of the vine. The illustrations of pruning and training present us with very different looking vines, but they are easily comprehended by any one who understands the manner of growth of the vine, and no system can be followed long without this knowledge.

Starting Plants in the House.

Many who have no hot-beds are able to have a few early plants of tomatoes, etc., by starting them in the house. A sunny window in the kitchen is the best place, as the atmosphere is usually less dry than that of the other rooms. We have before recommended this plan, and now allude to it for the purpose of calling attention to a box which will allow the plants to

be removed at transplanting as readily as from flower-pots, and which has the advantage over the pots, as it does not require such close attention in watering.

Figure 1 shows the box complete. It may be

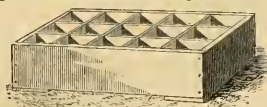


Fig. 1.—BOX WITH DIVISIONS.

made of any convenient size, 18 x 10 answering very well, the sides and ends well nailed together; across the bottom at each end is nailed a strip, and a loose bottom of thin board, just



Fig. 2.—DIVISIONS SEPARATE.

the interior size of the box, slips in and rests on these cross pieces, and is left loose.

The partitions are shown in figure 2; they consist of strips of common pasteboard, of the proper length, put together by slitting each half way through at the points where they cross. The short pieces are slit from the top edge half way down, and the long pieces from the bottom edge half way up. The partitions being put into the box, and the divisions filled with earth, it is ready to be used. In removing the plants, all that is necessary to do, is to set the box with its loose bottom resting upon a brick or block, when the sides may be slipped down and leave the contents free. Each division is a little square block of earth, containing the plant, and may be handled as readily as a ball of earth from a flower pot. A box for accomplishing the same end has been patented in this country, but the one here described is not patented, and may be used by any one. It was originally published in England in Shirley Hibbard's Floral World.

The seeds may be sown in a box without partitions, and the plants, when they show two or three rough leaves, may be transplanted into the divisions of this box. The seeds of those plants, such as cucumbers, melons, corn, etc., which do not transplant readily, may be sown in them at once. A rich, light soil, one that will not readily become compacted by frequent waterings, should be used, and in sowing the seeds, do not cover them too deeply. Many small seeds fail from this cause, and the seedsman is charged with selling poor seeds; with large seeds the depth is not of so much consequence, as the young plant has strength enough to push through it. Take care that the plants do not suffer for want of water, but in watering do not use water directly from the well or cistern; either allow it to stand until it has acquired the temperature of the room, or bring it to that temperature by the addition of hot water. Allow the young plants to have plenty of light; if they are disposed to wilt in the middle of the day, shade them by a screen of paper or muslin. As soon as the weather is mild enough, set the boxes out of doors during the day, but bring them in before the air becomes chilly. Boxes of this kind will be found very useful in the hot-bed, where they will answer in place of flower pots.

The Mangrove Tree.—(*Rhizophora Mangle*.)

"The tide is low, let us go down to the trees and pick some oysters," said a friend to us one day, on the Gulf of California. We went to the beach, where there was a thick belt of Mangroves and gathered an abundance of oysters from the roots, that had been left bare by the tide. The Mangrove is an interesting tree, curious in its manner of growth, and performing an useful part in the contest between the sea and the land. It is a shrub or small tree, sometimes thirty feet or more high, and is found along the muddy shores of the sea in the tropics. South Florida and near Guaymas in the Gulf of California are the only places where we have met with it, and there it grows only eight or ten feet high, but in the West Indies it becomes more tree-like. The leaves are evergreen, thick, and leathery; the flowers, four petalled, pale yellow, and rather showy. One of the remarkable characters of the tree is its tendency to throw out roots from its trunk at a considerable distance above the surface of the water; these arch off from the trunk, and ultimately find their way into the mud. In large trees, these roots are

growing downwards. The radicle penetrates through the apex of the nut, as shown in fig. 2, and elongates and even shows the rudiments of rootlets, as if to make sure of the chance of growing before it leaves the parent tree. As the plant grows in the mud and water of the coast, this would seem to be an excellent provision to prevent the seed from being washed away; it is kept in a place of safety until the embryo plant is so far advanced that it is ready to grow at once when dropped into the mud. The Mangrove



Fig. 2.—MANGROVE FRUIT.

is constantly encroaching upon the sea, and gradually extending the borders of the land. This it is enabled to do by its two peculiarities

of growth, that of throwing out roots from the trunk and branches, and that of dropping its little plants where they are to grow. The thicket will of course gradually progress, as a series of young plants when dropped fall beyond the line of the roots of the old ones; these new plants grow up and bear fruit, which when it has germinated, is dropped still further out, and so the thicket slowly but surely travels seaward. In the meantime the roots are weaving a network that retains earth and other matters washed down from the land, and gradually the area of dry surface is increased. The name *Rhizophora* is appropriate, as it means root-bearer.



Fig. 1.—MANGROVE TREE.—(*Rhizophora Mangle*.)

thrown off eight or ten feet above the mud, and are sometimes as large as a man's leg. The engraving, fig. 1, shows the singular appearance produced by this manner of growth; the tree looks as if it were supported upon an artificial frame-work. As the trees grow close together it can readily be conceived what an impenetrable thicket these interlaced roots must form. The fruit of the Mangrove is a small, one-seeded nut, which, instead of following the usual course of seeds, remains upon the tree and germinates. The young plant can hardly be said to "come up," as in this case its early life is passed in

LITTLE HELPS.—In a garden of any kind there are needed a number of home-made, convenient appliances that should be provided beforehand. *Stakes* are in constant demand for laying out beds, marking the places where trees and shrubs are to be set, etc. A good supply of rough, pointed stakes, 2 and 3 feet long, will answer. Those who like to be nice in such matters will make them from planed stuff and paint them. *Line* for marking and laying out. This should be $\frac{3}{8}$ of an inch thick and of a length proportioned to the size of the garden. It may be rolled upon an iron reel which has a point to thrust in the ground, or be rolled upon a reel in a box and used by fastening it to stakes. A *Dibble* is made of a stick of very hard wood with a natural crook in it to fit the hand, like the handle of an umbrella. It should be about 9 inches long and 2 inches in diameter.

If the point be shod with iron it will work easier and last the longer. *Pencils.* The Horticultural Indelible is good for those who will take pains. Provide for a label of some kind; common lead pencil is better than none. *Ties.* Keep a ball of strong but soft cotton or hemptwine at hand for tying up things that need it at once. *Labels.* These are made by machinery, of convenient size and shape for tying to trees or sticking into the ground. As these are not generally accessible, most persons make their own. The whittling propensities of boys can be turned to good account in making labels.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Kerosene Oil—Explosions.

The introduction of burning oils made from coal, and later from petroleum, has added greatly to our domestic comfort, and given the dwellers in the country one of the advantages of those who live in cities—a cheap and powerful light. Indeed, we think that kerosene makes a pleasanter light than gas, and the city housekeeper has no advantage over the rural one, so far as light goes, other than not being obliged to trim and fill her lamps. How much more the evenings are enjoyed, when the room is made cheerful by sufficient light! It is of itself a great inducement to reading. But as we sit down to read the paper, with a mental blessing on the man who invented kerosene, our enjoyment is seriously disturbed by reading the, alas, too frequent accounts of severe burning and death from exploding kerosene lamps, and we begin to be suspicious of our own lamp, which, though it has always behaved itself most commendably, we feel might at some time make us a subject for a newspaper item. We soon regain confidence in our lamp, which lasts until we hear of another "shocking accident." We suppose that these have been the feelings of many who burn kerosene, and it is worth while to look into the matter, and see to what these so frequent explosions are due.

Coal oil and petroleum consist of several distinct oils, which have different boiling points. If the crude article be heated to 100°, for instance, all that portion of it which will boil at that temperature will be driven off by evaporation. If the heat be increased to 110°, and steadily maintained there, another portion, that was not volatile at 100°, will be evaporated; and so on. The refining of the crude oils is done in accordance with these facts: the crude oil is put into a still, and separated, by the proper application of heat, into liquids that have different boiling points. Those which evaporate at the lowest temperatures are known as naphtha, benzine, gasoline, etc.; that which boils at a higher degree of heat is kerosene, and after that has been distilled off, there is left in the still a portion of oil not volatile.—Benzine and the other oils which have low boiling points evaporate rapidly at ordinary temperatures, and when their vapors are mixed in proper proportions with air, a compound is formed which will explode whenever light is applied. Hence these cannot be used for illuminating purposes in ordinary lamps.

They, (benzine, etc.), are produced quite abundantly in the process of refining crude oil, and as the demand for them for use in the arts is small in comparison with that for kerosene for burning, they are always very much cheaper than kerosene.

Kerosene, properly made by a reliable manufacturer, will not inflame at the temperature to which it is likely to be exposed in use, nor give off a vapor that will form an explosive compound with air.

As the oil for burning brings a so much higher price than benzine, there is a temptation to the refiner to leave as much of the latter in his kerosene as he can with safety. For the same reason there is a temptation to the dealer to buy both benzine and kerosene, and mix them, to reduce the price at which he can sell them. This is largely done, and it is very common to find kerosene of two qualities and prices in the retail stores. The low priced is made such by the addition of the dangerous benzine.

There are several forms of apparatus made for the purpose of testing the safety of the oil, and every dealer should have one and learn how to use it.

A sufficiently accurate test may be made by any one who has a thermometer. Place a cup in a tin or other vessel of water which is shown by the thermometer to be at 110°. When the cup is warmed through, put in a tablespoonful of kerosene. Hold a lighted match just above the surface of the kerosene, and if any vapors have been given off, they will

take fire. This is not attended with any danger, and a careful person, who will properly observe the conditions of temperature, may obtain correct results. Any kerosene that will stand heating to 110° without forming an inflammable vapor is safe to use, as far as danger from explosion is concerned. Some of that which is sold at the cheap rates will form an explosive vapor at the temperature of a well warmed dwelling, and the wonder is, not that there are so many accidents, but that there are so few.

The only thing the purchaser can do is, to avoid a cheap article, and to procure his supplies of persons who not only would not adulterate themselves, but who regard the safety of others sufficiently to take pains to obtain their stock from reliable sources only. Each dealer should insist upon a guarantee that the kerosene will not form an explosive vapor at a lower temperature than 110°.

There is a law of Congress against selling any illuminating oils that will not stand the test of 110°, and any one who sells dangerous oils is liable to both fine and imprisonment. We cannot learn that any one was ever even complained of, much less punished, under this law, so indifferent are the people to that which concerns their own welfare.

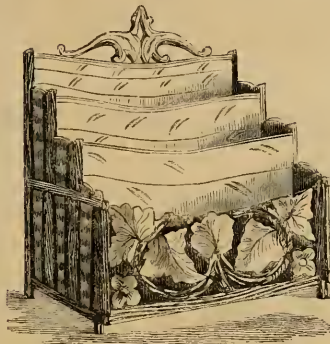


Fig. 1.—LETTER BOX.

Household Ornaments.

Articles of ornament in the household have so much influence in the family as educators, that we consider them quite as important as objects of utility. Indeed, we should prefer to spare some of the necessities of life, rather than miss the articles of taste that speak to us daily from the walls of our home. They are not only beautiful in themselves, but they remind us pleasantly of the friends who have thought of us at our household anniversaries. Costly pictures and splendid upholstery are well enough for those who can afford them, but those who possess them are not always people of taste, and they are by no means essential to the cultivation of taste in us. We may have beauty of form and color on a small scale and in inexpensive material, that shall kindle the imagination and give pleasure to the feelings quite as effectively as the gems of art. The homes of many who have a competence are utterly bare of ornament. Nothing is done, nothing is seen within to administer to our esthetic wants. The whole aspect is cheerless, and one escapes to the sunshine and verdure without, with a feeling of relief. It is worth much to children to have around them objects of refinement and taste, to cultivate in them an appreciation of the beautiful. It greatly helps the formation of habits of neatness and order in them and tends to make home cheerful and happy.

Fig. 1 shows a letter box with three divisions, very convenient for holding unanswered letters, envelopes, small note paper, postage stamps, memorandum cards, pencils, and the small household journal of which we spoke last month. It is about 6 inches long, 3 deep, and 6 high at the middle of the back. It may be made of black walnut or butternut, or of white wood or white pine, stained

and rubbed with oil. The front shows open carved work with leaves and flowers, and is too elaborate for a beginner; but a part of the carving can be left off and still make a very convenient box. It is put together with small iron pins and with wooden pegs and glue. It can either stand on the table, or be suspended from the wall in any convenient place.

Fig. 2 represents an oval frame for a carte de visite photograph. It is made from a piece of a cigar box, but any other thin, dark colored wood will answer as well. It is about 3½ by 4 inches. It is first marked out with a paper pattern and pencil, and then cut away with a sharp knife, and finished off with file and sand-paper, and rubbed with linseed oil. A small ring is attached to the back with a loop of tape and gum, for the purpose of hanging the picture.

A MATCH BOX.—Fig. 3 shows a bony scale or plate from a sturgeon. The edges are serrated and afford conveniences for fastening the box, by means of two screws or tacks, directly to the wall, or to a neat shield of black walnut or other wood, as shown in the figure. The surface is just rough enough for lighting a match, which suggests its appropriate use as a match box. Convenient and durable.



Fig. 2.—FRAME.

Too Much Help in Play.

How to entertain profitably and innocently the young folks of the family is often a difficult problem for the mother to solve. We think it made a good deal harder than it really is. Our German fellow citizens, with their characteristic fondness for philosophy, have studied this matter profoundly, and flooded the nursery and kitchen with toys and playthings that leave Young America nothing to do but look on and see them play. We have puppets that do their own dancing, and turn somersaults of their own free will, rail cars and carriages that go by invisible machinery, horses that canter without whip or spur, and swings that require no one to boost the swinger. The automaton principle has been carried into almost every plaything in which it could be made available. We think the philosophy of the inventors is seriously at fault. If it were not for the curiosity of Young America, which is piqued by the invisible springs and the inestimable privilege of pulling them to pieces and seeing how they are made, they would not answer for playthings at all. Children have an irrepressible desire to make their own amusement and to have it in their own way. They resent too much showing as an impeachment of their capacities. How often does the little boy spurn your proffered help with the indignant exclamation "I want to do it myself." The little girl is equally anxious to make her own dolls and dress them. The purchased article, however complete, is not quite so satisfactory as the workmanship of her own hands. The sled that Ben makes from a pair of runners, split from a crooked stick which he cut in the woods and brought home on his back, is more serviceable than anything he can buy in the city. He will never see a wagon so much to his taste as the rude affair he made from an old soap box and a pair of wheels cut solid from a white oak board. Has he not bored every hole in it, and driven every peg and nail? Who has a better right to be proud than he, as he drags his sister away to school in a carriage of his own making? It may lack paint and gilding, but there is a beauty in it he will never see in the products of the factory in later years. If he can harness the dog Carlo into the fells, with tow strings



Fig. 3.—MATCH BOX.

of his own twisting, and drive him with a homemade whip, his happiness is complete.

We want, then, to give our children the raw material of playthings at the earliest moment they are capable of handling tools to make them into toys, or articles of use, as suits their fancy. This will develop their constructive faculties and tend to make them ingenious and helpful as they grow up. They do not care for anything finished. They are growing themselves and like to make other things grow large or small, as the case may be. Give a boy building blocks and he will construct houses, barns, churches, towers, and fortifications. Give him a house ready made, and his first instinct is to pull the roof off and see what is inside. His destructiveness is started on a precocious development. Give him a well furnished toy chest, and he will soon learn to make his own playthings and will be much better entertained and satisfied than by any amount of toy trumpery imported from the city. The country abounds in the raw material of entertainment, and it is for this reason that children so greatly prefer it to the city, where everything in the toy line is finished.

Bones and Ashes.

Bones and ashes pass through the housekeeper's hands every day. Wood is still the chief fuel in the farm-house and the value of the ashes is pretty well understood. They are prized for the lye they yield, and if there is a surplus from the soap making they help the kitchen garden at the back door. The bones are generally thrown to the dog and lost. Now if the careful housewife would save the bones as regularly as the ashes, she would practise a wiser economy and help her kitchen garden twice as fast. Bones are worth twice as much as ashes for manure, if dissolved, and the ashes will reduce them. Put both into a barrel in the cellar, if you please, and after mixing them half and half, keep them constantly moist with soap-suds, the hotter the better. The suds should not be poured on in such quantities as to leach the ashes. In a few months the bones will be disintegrated and the whole mass may then be mixed and will make an excellent fertilizer for the flower border or the kitchen garden.

Hints on Warming Dwellings.

The old-fashioned fireplace, with its cheerful blaze upon the hearth, was a very defective way of heating a room. There was more poetry in the flickering brands and the shadows dancing on the wall than comfort in the atmosphere. The ventilation was perfect and the warmth sufficient in mild weather, but in the cold days it was impossible to make the back parts of the room comfortable without seorching everything near the hearth. It was enormously expensive, or would have been if wood had not been at every man's door. The fire frame which succeeded was a great improvement, both in saving fuel and in distributing the heat more uniformly through the apartment. It added nothing to the facilities for cooking and was soon succeeded in the farm-house by the stove, which served the double purpose of cooking the breakfast, and warming the people who came to eat it. This is the most popular article now in use for warming the farm kitchen and dining-room. The patterns are very numerous, each having its happy device for baking, boiling, and broiling, in the most perfect and economical manner. The difference is probably much less than the manufacturers would have us believe. They nearly all agree in having a good draft or capacity to ignite and burn fuel rapidly, in regulating the draft and turning the heat to various parts of the stove by means of flues and dampers, and in using a very considerable quantity of fuel to produce the required heat. Furnaces and heaters in the cellar are town devices for warming, when nearly all parts of the house are in use every day and when large expenditure is inevitable.

Whatever apparatus is used, two objects should be aimed at and seemed so far as possible; an uniform temperature in all parts of the house in

use during the day, and a change of the air as fast as it is vitiated by breathing. The health of the family depends very much upon these conditions, and they are vastly more important than the particular kind of stove or furnace used, the kind of fuel, or mode of combustion. People take cold quite as frequently in the house as in the open air, and wonder at it as they are not conscious of any exposure. If they kept a thermometer or looked occasionally at the stove dampers they would learn the cause. The living room would often show more sudden and extreme changes than any that take place out doors, and it is against these sudden changes that we wish to guard. Many habitually keep their rooms too warm, especially persons of delicate constitution, and invalids. Going from a temperature of 80° or upwards into the freezing air is a violent shock to the most robust. We have frequently been in rooms where the stove was kept nearly to redness, and the whole atmosphere near it must have been much above a hundred. A temperature of from 67° to 73°, Fahrenheit, is warm enough for people in health, and with a little attention to fuel and dampers the rooms may be kept within this range. It is a common error to have too small a furnace or stove for the space to be heated. There must be a considerable body to the fuel, to have the combustion gradual and the heat uniform. The heat of a furnace is best tempered by a layer of ashes upon the coal after it is thoroughly ignited, in addition to the partial closing of the draft. By this method we have found it quite practicable to keep the heat within a degree or two of 70° during the day, and to drop it a little as desired for the night. This is not only much more healthful but more economical. A furnace left to the management of an ignorant or unfaithful servant will consume at least a third more coal than is necessary, and keep the whole house too cold or too hot.

Ventilation is quite as essential to health as uniform warmth. Houses are made much lighter than they used to be, and it is not until quite recently that ventilation has received a fair share of attention. There was occasion for Downing's essay on "The Favorite Poison of America" and it should be scattered broadcast over the land as one of the tracts for the times. The air in a close room is rapidly vitiated by breathing and rendered unfit for use. The problem to be solved is to bring in a stream of pure air from without and to carry off the foul air, without lowering the temperature too much or creating unwholesome draughts. There are many devices for effecting this object. Almost any is better than "the poison."

Rats—How to Get Rid of Them.

A house-keeper is sorely afflicted with these pests, and wants deliverance. She has tried caustic lime in their holes, sometimes with good effect, and sometimes with none. She has used "Bennet's Sure Death for Rats and Mice," and the sure death indeed made them more lively. She has caught forty in traps, and twice forty came to their funerals. She suspects Bennet is a deceiver. She would be quite willing to feed them on carrots and turnips, if they would let the potatoes alone; but they seem to know that the Early Goodrich are worth five dollars a barrel for seed, and pitch in accordingly.

There is no such compromise as our friend suggests. There must be clear-ridance, or there will be continued annoyance. The writer has had a long fight with these creatures, and found but one remedy—rat-proof cellars or vessels. Shooting is good sport, but the smell of powder does not prevent their multiplying. The terrier dog and the cat are good as long as they stand guard, but eternal vigilance cannot be expected of the best ratter. Poison is effectual—on the slain—but the living will not take warning. Wherever vegetables or fruits are stored, rats will come if they can. Cement the bottoms and walls of the cellar, and it is safe. In this remedy we found rest after a ten years' fight. It will cost something but it is effectual, and one may sleep well without fear of rats. Cement and sand are cheap in most parts of

the country. Take one part of cement to two of sand, by measure, mix with water, and apply with a trowel as fast as made. It makes a nice smooth bottom, easily swept or washed.

A Few Hints from an Old Housekeeper.

I want to get new carpets for our two front chambers, and from long experience and observation, I have decided to get "Turkey carpet," as we used to say in my young days. Husband thinks Brussels or velvet would be as cheap, or cheaper, than most other kinds, being so thick and close that it would never wear out.

Now, there are two sides, you know, to this question, and when the handsome side is worn out, there is an end of it. So I shall split the difference, and take the money left over from my favorite Ingrain, and buy a handsome bureau for Jeanette. I know husband won't care when he sees how nicely our two rooms look carpeted alike, as Jeanette says they should be, with good Ingrain, (all wool). If you want a serviceable carpet, and one that looks neat and ornamental, get an Ingrain.

[Ingrain is good, but three-ply is better, and though more costly, is the cheaper one in the end.—Ed.]

I profess to be somewhat acquainted with the carpet family, and because of their dust and untidiness, husband and I have concluded to exclude them from our dining or living room. In a family of a half dozen growing, rampant, romping boys and girls, that are frequently practicing "heel and toe" in all its variations in heavy soled boots, or breaking off into the more graceful waltz or schottische, nothing is so appropriate as a good, old-fashioned oak floor, swept clean, and mopped over every morning with an ample housecloth.

Carpets are well enough in the room where father, mother, and the tamer members wish to pursue their more quiet occupations of reading, writing, and sewing.

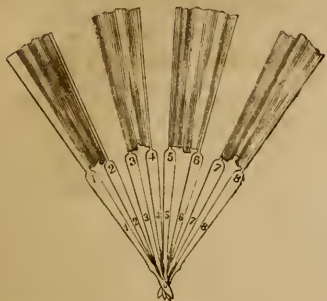
Rag carpets, well put together with cotton chain, as we used to have them, were, on account of their durability, tolerated, but the rag carpets of to-day, with hemp chain, as well as all manner of hemp carpets, are the most expensive, because the least durable of any carpets in use. The "German" carpets, with bright showy stripes of chain, all wool, and a heavy filling of coarse hemp thread, although appearing to be heavy and serviceable, are really a very unserviceable carpet, showing the dust and lint, requiring frequent sweepings, and wearing out sooner than so expensive a carpet should. So all entry and stair carpets, filled in with coarse hemp, although appearing handsome and heavy, really wear but poorly on account of the ridges of hard hemp beneath the soft wool chain.

Light colors, either in wearing apparel or carpets, wear much better than dark. Neatly blended figures, covering the fabric evenly and connecting the piles closely, render a carpet more durable. In sweeping carpets, use a fine broom that has been but little worn, skim over the surface with a light, short, airy brush, without making a scrubbing noise or one like a carpenter sawing pine boards. Frequent sweeping wears a carpet more than the tramping. It is a good way to clean the room up with a turkey wing in one hand and dust-pan in the other, going over it whenever dust or lint appears, sweeping, or rather fanning, the dust into the dust-pan. This saves it from the screever wear of the broom. There is an art in sweeping as well as in most other housekeeping operations. Some seem to think that raising the dust is of more importance than raising the wind or windows, and that making a big stir generally is the only way to clean a room, and let the dust all settle again from whence it came.

A few well cultivated plants in the sunny windows of your sitting-room give a cheerful air, but remember that a window full of plants, crowded in so as to exclude the air and the "sweet sunshine," is rather a nuisance than an ornament.

Do not let the fear of fading carpets lead you to fade the rosy tints from the human flowers about you that are of more value than many carpets.

BOYS & GIRLS' COLUMNS.



A Curious Fan.

Recently we examined a Japanese fan which is calculated to afford some amusement. At first look, nothing out of the common way was seen. It was opened and closed like any other fan, when spread from left to right; but on spreading it the other way, from right to left, it seemed to have suddenly fallen to pieces, as shown in the accompanying engraving. We will try to describe the arrangement so that our ingenious young readers may make one to puzzle their friends with. First make the splints or sticks for the frame in the ordinary manner. Cut paper or silk for the covering in strips two or three inches wide at the top, according as the size of the fan is to be large or small. The cover strips should be tapered, so that they may fit smoothly when the fan is spread out. The right taper can be learned by laying the splints upon the silk at the top, and bringing their ends together. Next lay one splint (4) upon the right hand edge of the silk, and fasten them there with gum or paste. Make 10 pairs in this way, one pair of splints in each, and number the splints, 1, 2, 3, 4, etc. For the outside parts have one wide and one narrow splint (1, 8). Make a hole in the lower end of the splints, through which a wire is to be passed to hold them in place. Put the wire through the splints, in the following order: through No. 1, 3, 2, 5, 4, 7, 6, 9, 8, 11, 10, 13, 12, 15, 14, 17, 16, 19, 18, 20. Fasten the wire by twisting it at the ends, to prevent the splints slipping off, and the fan is complete.



A New Popgun.

The boys in New York and vicinity are amusing themselves with a new toy, sold at the shops, which is easily made with a jack-knife and a gimlet. Bore a hole lengthwise through a straight pine stick, say six inches long, and whittle it into the form of a small cannon, as shown in the engraving. Fasten a small peg on each side of the cannon, and make a rod to fit in the inside of the bore, but about an inch shorter. Leave a knob on the end of this stick. Tie each end of a strip of India rubber to the pegs, and stretch the middle part of the strip around the end of the knob on the rod, as shown in the illustration. Draw a pea into the mouth of the cannon; draw the rod back, take good aim and let fly; the India rubber spring will force the rod forward, and send the pea out with considerable force.

Why Do We Cultivate Plants?

There are two kinds of life—animal life and plant life,—and yet in many ways these are not so different as they seem. Almost every thing that lives and grows, whether plant or animal, must have light, air, and suitable food, though plants and stones may differ. The leaves of plants absorb light and air, as the pores of our skin do; if they are kept in the dark they become white and slender, just as children grow pale and weak who do not exercise much in the open air.

The real mouths of plants, however, are in their roots, and with these they take in food from the earth. Out of all the various substances which make up the soil, each plant must have the food that is best for it, to grow well, as a horse needs hay and grain, and a dog meat. For this reason it often happens that some land is better for certain crops than for others, and a good farmer or gardener will not only find out what to plant in his fields,

but will learn what manure will give to the soil, and what food needed for the grain or vegetables he wishes to grow.

Children who have plenty of suitable, well-prepared food, grow to be strong and healthy; horses and cows, to work well and give rich milk, must be abundantly fed; and so the gardener is obliged to provide well for his fruit trees, vegetables, and flowers, if he expects to make anything of them.—He must keep the earth loose by hoeing, so that the tender roots can run through it easily in search of food, and also that air and moisture may be supplied. He must give water and new nourishment, when the soil needs them, and seek to know what is the best food, and he must keep away weeds which would appropriate the food in the earth.

This care of plants and soil, which we call cultivation, has become quite a science, producing wonderful results, and no boy has more need of education and reading, than one who is to be a farmer or gardener. The wild apple is small, hard, and sour, but under cultivation it becomes large, tender, and juicy; and moreover, many different kinds of apples with different flavors are obtained. Potatoes, when wild, are only poor little tubers, but under cultivation increase in size and furnish food for thousands of people. Lettuce carefully grown for market is brittle and delicate, while if a few seeds chance to scatter and struggle up in the hard path or in a corner among weeds, the leaves will be tough and bitter. Cultivation does quite as much for flowers. They grow larger and more brilliant in color, and many which are single as wild flowers become double. The wild rose has only one row of petals, and is full of thorns, but in gardens and hot-houses the slender yellow stamens swell into broad petals, row upon row; and there really seems to be no end to the different kinds of roses we now have.

About Earthquakes.

The newspapers are giving accounts of frequent earthquakes recently occurring in some of the West Indies, particularly in the Island of St. Thomas. As many as five hundred distinct shocks, it is stated, have been felt. Some of these were severe enough to throw down houses, and destroy much property and many lives. Such visitations have not been uncommon in that part of the world. A most terrible convulsion occurred in the Island of Jamaica in 1692. The land on which stood the city of Port Royal, extending over 1,600 acres, or more, suddenly sunk out of sight, the sea rolling in covered the whole area, and ships from the harbor were driven over the very place which a few minutes before was teeming with busy life. One of the most noted and destructive earthquakes ever known occurred in Spain in 1755. A rumbling noise was heard, which was immediately followed by a shock that threw down most of the buildings in the city, overwhelming 60,000 persons in the ruins. A great number sought safety by rushing out upon an extensive marble wharf recently built, where there were no buildings. It suddenly sank with them, drawing many vessels and boats down the immense whirlpool which was formed, and they were seen no more; not a body, or a fragment of the wrecks, returned to the surface, and after the convulsion was ended the water was found to be 600 feet deep over the place. This shock was felt throughout Europe and extended across the ocean to America. The tide rose suddenly to the height of 30 feet along the shores of the West Indies; the coast of Massachusetts felt the shock, and the waters of Lake Ontario were greatly agitated. As lately as 1857 a severe earthquake was experienced in Italy in the vicinity of Mount Vesuvius, by which more than 20,000 persons lost their lives. The city of Quito, in Ecuador, was nearly destroyed by a similar visitation in 1820, and many thousands perished.

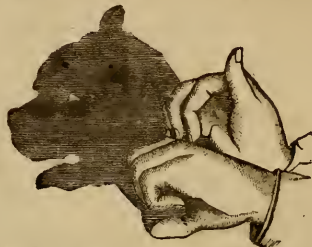
Those great convulsions usually occur in the neighborhood of volcanoes, although their effects are not confined to those regions, as we have seen in some of the instances here noted. Frequently, if not usually, the earthquake moves forward like a succession of waves, as though the surface of the earth rose and fell upon some heaving fluid beneath. Indeed, facts seem to show that this may be the case. It is generally believed that the interior of the earth is a mass of melted matter; that volcanoes are openings in the crust, through which the fiercely raging fires find vent as through chimneys. Various causes might produce violent commotion in the vast fiery caldron. A portion of the crust beneath the ocean giving way and letting its waters pour in upon the fiery tide would produce tremendous results. Various gases exploding beneath the surface would be followed by great convulsions. We can easily believe that if the mighty elements upon and within the earth were permitted to exert all their power, the globe itself might be rent into fragments. It seems probable, however, from the facts brought to light by geology, that these convulsions of nature are of less frequent occurrence than during past ages, and that the earth is becoming better and better fitted as a habitation of man. The great mountains which cover so much of the earth's surface appear to have been thrown up by volcanic action in times perhaps before the history of man, as there is

no record of any such mighty changes having occurred for thousands of years past. What the future may have in store for this planet is known only to Him who holds all its powers subject to His own will, and we may be sure that wisdom and love will determine all that occurs.

Printers' Mistakes.

Mr. Greeley, who can write a fair hand, but who is usually too much in haste to make letters that any ordinary reader can decipher, one day wrote an article headed: "William H. Seward." His surprise was great on seeing it in print as: "Richard the Third." At another time he wrote: "Three men in buckram," but the compositor set it up: "Three men in a back room." Another author wrote: "Is there no harm in Gilead?" which came out thus: "Is there no barn in Gilead?" Of course the printers had to take the blame, but we sympathized with them when we heard one of our own printers, who was trying to make out a puzzling piece of copy from "Head Quarters," exclaim: "Whoever writes like that ought to be sent to China to mark tea boxes!"

New Puzzles to be Answered.

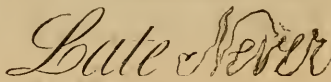


No. 29. *Puzzle Picture*.—The picture shows how to make a picture of a dog's head on the wall. After trying it, endeavor to find out what kind of fish it represents.

No. 300. *Word Puzzle*.—I am hard, soft, easy, uncomfortable, long, short, wide, narrow, round, square, high, low, good, bad, of all colors, of all sizes, of all shapes, and used by everyone. Transpose me, and I am a drink in very general use, I am of several colors, and foreign birth. Transpose again, and I am one of the most important points of a good guide. What is the word?



No. 301. *Illustrated Rebus*.—Name of an interesting play.



No. 292. *Illustrated Rebus*.—Old proverb in a new dress.

Answers to Problems and Puzzles.

The following are answers to the puzzles in the February number, page 67. No. 296. Turn the picture bottom side up, and the head of the "Old Man of the Woods" may be seen.... No. 297. A flattering lip brings ruin.... No. 298. Behemoth (*See his mother*). The following have sent correct answers to some of the puzzles previously published. J. F. I. Oster, P. B. Wilson, L. F. Irwin, W. and W. Belcher, C. V. Bradley, Wm. H. Fulton, Ebenezer J. Bridge, Daniel W. Leitzell, Lodema C. Boice, B. P. Bigelow, Isaac Evans Bonsall, Joseph M. Darr, H. B. Swazze, E. Briggs, Jacob Diehl, Samuel N. Stubbbs, Ruth Morris, Oscar W. Baker, George B. Slocum, "P. M. A.," Mina M. Walker, Hugh Latimer, Jesse Billups, Israel Camp, Mary Wells, Lizzie Kiser, Maggie A. Gray, J. Milton Snyder, Burksville, Ky., George H. Townsley, N. L. Henderson, D. A. Griffin, Byron Wright, Rachel Dagne, H. M. Keeny, Addie and Nellie Barnes.

What is the difference between a gauze dress and a drawn tooth? One is too thin and the other tooth out.

The bread of life is love; the salt of life is work; the sugar of life, poetry; and the water of life is faith.



[COPYRIGHT SECURED.]

CAUGHT IN THE ACT.—Engraved for the American Agriculturist.

"Oh, the little pickpocket! Does he not know it is wrong to steal, especially from his father?" Not too fast there, young friends. Look into the boy's face, open, frank, and honest, brimful of fun, with a spice of curiosity sharpening the look from his wide-awake eyes. Does he appear like a thief? If he were stealing, would he not be standing on tip-toe, reaching forward cautiously, keeping his eyes on his father, ready to jump back at the least motion, and having a mean, sneaking, guilty look? If his father should suddenly awake, would he sternly rebuke him? No, indeed! "Oh! you little rogue," he would shout, and giving him a playful shake, they would have a lively frolic together. The mother's looks show this; she will surprise him with "Now I've got you," and a merry laugh will follow. The artist here admirably tells the story of affection and confidence. The boy would not dare take such a liberty if his parents were cross, harsh, and tyrannical; or if he attempted to pick his father's pocket, it would be as a thief, and not in play.

Too Well Acquainted.

A gentleman holding a prominent office in Washington concluded to change his lodgings. He sent one of the waiters of the hotel where he had selected apartments

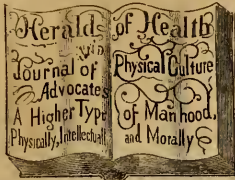
after his luggage. Meeting the waiter an hour or two afterward, he said: "Well, John, did you bring my baggage down?" "No, sir," blandly responded the sagacious gentleman. "Why, what's the reason?" "Case, sir, the gentleman in de office said you had not paid your bill." "Not paid my bill—why, that's singular—he knew me very well when he kept the Girard House in Philadelphia." "Well, mebbe," rejoined John, thoughtfully scratching his head, "dat was de reason why he wouldn't give me de baggage." The gentleman who was of a merry turn took the joke in good part.

Eating Green Fruit.

Cholera morbus, doctors, medicine, pain, and danger—these things come very naturally after eating green apples, pears, plums, etc.; but this is not all. There are other fruits, pleasant and healthful when ripe, but more dangerous when gathered too soon. There is the fruit of the tongue. "Words fitly spoken are like apples of gold in pictures of silver," but "Hasty words stir up strife." They should hang on the branches of thought until filled out with wisdom, be mellowed by kindness and love until they drop from the lips like luscious fruit, and those that speak and those that hear may feast together with

pleasure and profit. Riches, which are the fruits of labor, may make the whole life glad, but they may also be grasped after in speculation, in lotteries, at the gaming table, and in other ways; this is snatching at unripe fruit, and very few have strong enough moral constitutions to withstand the poison they contain. Thousands are ruined in body and soul every year because they "make haste to be rich" and "fall into a snare." Pleasure is the most dangerous, because the most tempting, of all the fruits of life. It ripens on every branch of experience, in just the right quantities to ensure health and happiness. It cheers the laborer at his toil, lightens the task of the student, gives sprightliness to the boy at his game, and patience to the mother in her cares. But it must not be greedily gathered from every opportunity. The disfigured and miserable victim of intemperance sought it by hastening the flow of blood through his veins, and it poisoned him; the glutton gathered it before it was ripened by appetite, and was made miserable by dyspepsia; a beautiful girl was not content with the portion which one loving heart could bestow; she lent an eager ear to flattery, gathered pleasure from every source, and found swift ruin. Think of these things as fruit time comes on, and be wise enough to profit by the lesson.

(Business Notices \$2.50 per Agate Line of Space.)



CONTENTS FOR 3 MONTHS.

JANUARY.

The Brannville Athletic Club—Moses C. Tyler
Two Rules of Perfection—Rev. O. B. Frothingham.
The Family—Mrs. E. Oakes Smith.
Excess in Recreation—Horace Greeley.
Health of College Students—E. O. Haven, LL. D.
A Letter to Little Polk—Mrs. R. B. Gleason, M. D.
Lying—Rev. Henry Ward Beecher.
Good Tools and Bad Workmanship.
 "The Schoolmaster's Poem." Do not Swallow Grape Seeds.
 Conchology and Physiology. Faith in Medicines.
 Standing by Thackeray's Kindergarten.
 Grave. What to Know.
 Diseases of the Stomach. Mothers and Temperance.
 The New Year. Treatment of Consumption.
 Why Young Men Leave the Farm. The Art of Breathing.
 Pork as Food. Laws of Health.
 Movement Cure, etc. Cold Bathing in Winter.
 Dark Rooms. Itch.
 Tea Drinking. How to Purify the Blood.
 Outdoor Life for Women.

FEBRUARY.

The Cure of Incurables—Dr. J. B. F. Walker.
Physiology of Man—Rufus King Browne, M. D.
Self-Knowledge (Poem)—L. D. Burdick.
The Use of Tobacco and Wine—Rev. H. W. Beecher.
The Milk Cure—James Coulter Layard.
Cure of Constipation—George H. Taylor, M. D.
Choosing a Husband—Mrs. E. Oakes Smith.
The Brannville Athletic Club, Temperance Hotels.
"Deacon Snipp's Last Kick", The Road to Rain.
The Beggar Girl (Poem). Kelley Island Grapes.
Revelations of a Retired Physician. Itch.
Ulcet of the Stomach. Wine Making.
Thoughts and Readings. Walking and its Uses.
Social Science. Fruit Raising in New Jersey.
Tight Lacing. Shall We Eat Pies?
Overworked New York. A New Temperance Movement.
Editors. Reading by Gaalight.
Physiology in Studies. Healthy Spices and Condi-
Something to Take ments.

MARCH.

Resurrection of the Body—Rev. O. B. Frothingham.
Choosing a Wife—Mrs. E. Oakes Smith.
A Happy Old Age—Rev. Henry Ward Beecher.
Deaf and Dumb—H. P. Peet, LL. D.
Why Men Drink—Horace Greeley.
Domestic Unhappiness—Mrs. R. B. Gleason, M. D.
The Athletic Club—Woman's Strength—The Cause that
 Faleth Not—Warming Railway Cars—Ulceration of the
 Stomach—Who Shall Take Care of the Children, etc., etc.
 The April No. will contain a discourse by Rev. E. H.
 Chapin, LL. D., on **The Trials of Young Men**.

This monthly is a real live, and valuable family magazine,
 original in character, entirely new in matter, and designed
 to show how human life may be made beautiful, how health
 may be regained, how children may be reared in health, with
 strong, athletic bodies, how to nurse and care for the sick,
 how to cook, to eat, drink, sleep, bathe, exercise, rest, and
 how to make the most of one's life. Its list of regular
 contributors is large, and embraces many of the best writers
 of the times. Put this monthly into the hands of son and
 daughter, wife and mother, husband and father, for one year,
 and it will do them good. \$1.00 a year. Samples 20 cents.

Every person who subscribes for 1898, and sends 25 cents
 extra to pay for postage, shall have a beautiful steel engrav-
 ing of Lincoln at Home, size 19x21 inches, and worth \$1.00.

For 30 subscribers and \$60, we will send a Wheeler &
 Wilson Sewing Machine, worth \$35.

MILLER, WOOD & CO.,

15 Laight Street, New York.

American (Waltham) Watches.

The Watches manufactured by the American Watch Com-
 pany of Waltham, Mass., have now been before the public
 for a period of twelve years, and have not only steadily ad-
 vanced in reputation, but have received the approbation of
 the most skillful experts, as well as of railroad engineers,
 conductors, expressmen, and others requiring accurate, re-
 liable, and durable time-keepers in their ordinary business
 pursuits.

By successive reductions during the past two years all
 grades of our Watches may now be bought at prices to cor-
 respond with those asked before the war, thus making them
 not only the best but the cheapest in the market.

Unscrupulous dealers occasionally sell a worthless Swiss
 watch representing it as made by us. To avoid all imposi-
 tion, the purchaser should invariably demand a certificate
 of genuineness, signed by the Treasurer, R. E. ROBBINS.
 For sale by all respectable dealers.

ROBBINS & APPLETON, Agents,
 No. 182 Broadway, N. Y.

PARDEE'S SABBATH-SCHOOL



A new work by R. G. Pardee, A.M., full of prac-
 tical instruction and suggestion in every department of
 the Sunday-school. Pastors, Parents, Superintendents
 and Teachers will want it. For a full description send to
 J. C. Garrigues & Co., Publishers, 148 South
 Fourth Street, Philadelphia, Pa.

MY CATALOGUE of New and
Interesting Plants, and New
French Gladiolus, is now ready.
GEO. SUCH, South Amboy, N. J.

GRAPE VINES

Of Large Size, for Immediate
Bearing.

As we have frequent applications for vines ready for im-
 mediate bearing, we have grown a superior stock of such,
 including Concord, Hartford, Creveling, Ives,
 Reutz, Alvey, Iowa, &c. We will furnish one each of
 the above named kinds for \$10.

For further information, send 10 cts. for Catalogue and
 Circular.

J. KNOX,
 Box 155, Pittsburgh, Pa.



ORANGE JUDD, REV. BISHOP SCOTT, SO-
LOMON ROBINSON, REV. HENRY WARD BEECHER, MRS.
LATRA E. LYMAN, and thousands of others, will tell you
that DOTT'S WASHING MACHINE and the UNIVERSAL
CLOTHES WRINGER are a real success, and save their cost
in clothing every year, besides saving more than half the
time and labor of washing. Send the retail price. Washer,
\$14, best Wringer, \$9, and we will forward either or both
machines free of freight, to places where no one is selling,
and so sure as we they will be liked, we agree to refund
the money if any one wishes to return the machines free of
freight, after a month's trial according to directions.

R. C. BROWNING, General Agent,
 (Opposite Merchants' Hotel), No. 32 Cortlandt-st., N. Y.

Worthy of all Farmers' Attention.

Browning's Excelsior Phosphate is without doubt the best
 fertilizer in the market, and is the only fertilizer that varies
 in its composition, according to the crop for which it is in-
 tended to be used. Pamphlets giving full particulars, fur-
 nished free of charge, by addressing the manufacturer
 GEO. L. BROWNING, No. 31 Market, Camden, N. J.
 The manufacturer is a practical farmer.

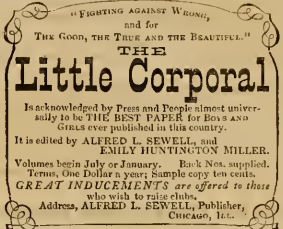
Destruction of Insects and Cure of Skin
Diseases in Animals.

CRESTIC SAPONACEOUS COMPOUNDS (Patented).

See advertisement in *Agriculturist* for Dec. 1867.
 From numerous testimonials already received, we select
 the following from a practical owner in Delaware Co., N. Y.:
 "Have received the Sheep Dip, and have used it on some
 calves, and find it *sure death to lice, &c.* I can confidently
 recommend it for *destroying vermin of every description.*
 It gives the hair a glossy appearance, and I shall use it on
 all my stock." These compounds manufactured solely by
 JAS. BUCHAN & CO., 150 Elizabeth-st., New York.



COLGATE & CO'S
Fragrant Toilet
Soaps are prepared
by skilled workmen
from the best materi-
als, and are known as
the STANDARD by
dealers and consum-
ers. Sold everywhere.



Send Stamp for priced Catalogue of new books on
ARCHITECTURE.
 GEO. E. WOODWARD, 191 Broadway, New-York.

PRINCE & COS.
AUTOMATIC ORGANS
AND MELODEONS.
Forty thousand are now in use
BUFFALO, N.Y. CHICAGO, ILL.

KITTATINNY.—"Superior in flavor to all
 others."—Ed. Am. Agr. "There is no doubt that it is
 the best cultivated Blackberry known."—N. Y. Tribune.
 See who says so, page 74, Feb. No. Plant the BEST, plant
 the *Gentle*. You can get them of the Intro-ducer
 E. WILLIAMS, Montclair, N. J. Order early.

GRAPE VINES.

For prices, see list on page 116.
PARSONS & CO., Flushing.

Waterman's Patent Cast Iron Roll Pans

For baking *French Rolls, Cakes, Pop Overs, Corn Bread,*
 etc. The best article in use; see editorial notice page 23 in
 Jan. No. of *Agriculturist*. Manufactured and for sale by the
 owners of said patent, **MUSSELL & RIVIN VAN N. P. CO.,**
 New Britain, Conn. and at their warehouses in New York,
 Philadelphia, Boston, Baltimore, and San Francisco.

Inquire for Waterman's Patent Bake Pans. Recipes fur-
 nished with the pans.

Dealers please send for Illustrated Circulars.

Page's Green-house Springe, Force Pump,
 Garden and Fire Engine.

New styles from \$1 to \$12 each. For Florist, Fruit and
 Vine Grower, Market Gardener and Housekeeper, should
 send for Circular. It will pay!

N. E. P. P. CO., Danvers, Mass.

FRANKLIN
BRICK MACHINE.

Justly celebrated for perfect simplicity, great strength,
 and immense compressing power, is GUARANTEED, with
 eight men and two horses to self-charge the clay and make
 3,000 to 5,000 elegant bricks per hour. J. H. HESICK, Prop-
 rietor, No. 71 Broadway, New York, Jan. 18.

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CULTIVATOR

Warranted to save the labor of four to six men. Send for
 Circular. BLYMTER, NORTON & CO.,
 Manufacturers, Cincinnati, O.

Fort Edward Collegiate Institute.

Spring term, March 24th. Sixty dollars for board, fuel,
 washing, with common English branches. Best sustained
 Boarding Seminary for ladies and gentlemen in the State.
 Brick buildings, three teachers. Address, for Catalogues
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KNOX FRUIT FARM AND NURSERIES.

150 ACRES DEVOTED TO SMALL FRUITS.

Descriptive and Illustrated Catalogue of 64 pages Furnished
for 10 Cents.

GRAPES.

10 acres of vines for sale, 1, 2, and 3 years old.

MR. DETERM, Sec. of *Lake Shore Grape Growers' Association*, says of our present stock of vines: "His stock of young vines is as good as I have ever seen, and the best of equal extent and variety, within my knowledge at this time. The assortment of varieties is very complete, embracing all the popular kinds in good proportion—the supply of Concord and Ives is specially large and fine. The prices I regard as quite reasonable for the quality of the stock. Having known Mr. Knox for many years, I have the fullest confidence that his mode of doing business, as well as the quality of his stock, will give entire satisfaction."

We guarantee our price to be as low as the same quality of a genuine article can be had anywhere, and can furnish stock of any grade desired.

We claim Success in Vine and Grape growing.

For List of very large vines for immediate bearing, see page 169 of present No. of *Agriculturist*.
Send at once 10 cts. for the New Edition of our Catalogue.

STRAWBERRIES.

For many years we have given Strawberry culture very earnest attention, and have succeeded in securing a collection which is unequalled anywhere. Our success in growing fruit of the finest quality, commanding the highest prices, at home and in distant markets, is evidence of the correctness of our judgment in reference to varieties, mode of culture, marketing, &c. For full particulars send 10 cts. for Small Fruit Catalogue.

The past season with us has been very favorable for the production of plants of the best quality. While floods have

prevailed in the East, and drouths in the West, the weather with us has been every thing that could be desired. As a consequence, we are now able to offer an immense stock of plants of the very best quality, including Jucunda, (No. 700), Fillmore, Golden Seeded, Burr's New Fine, Wilson, Agriculturist, and all other desirable varieties.

JUCUNDA—OUR NO. 700.

Is without doubt, much the most valuable Strawberry we grow. For illustrations, descriptions, testimonials, &c., see Dec. No. of *Agriculturist*, page 461, and Catalogue.

We offer strong plants as follows:

12 for.....	\$1.00
50 for.....	3.50
100 for.....	6.00
200 for.....	10.00
1000 for.....	50.00

At the price per dozen and single hundred, we will send plants by mail when desired. Larger quantities by Express, the purchaser paying Express charges.

For descriptions and illustrations of leading varieties—select lists for Home and Market purposes, including early, medium, and late—offers of pot grown plants for immediate bearing, and much other valuable information in reference to Strawberry Culture, send 10 cents for our Catalogue of 64 pages.

RASPBERRIES.

The *Clarke*, *Philadelphia*, *Naomi*, and *Duhring*, are now attracting much attention. Our supply of these varieties is equal to any demand. Also, of *Hornet*, *Pilate*, *Franconia*, *Kirkland*, and *Brucke's*

Orange, *Im. Black Cap*, *Purple Cane*, &c., &c. See our Catalogue for prices, select lists, &c.

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The *Kittatunny* is, perhaps, the most valuable Blackberry now offered. Our supply of plants is large and superior. Also, of *Wilson's Early*, *Rochelle*, and *Dorchester*.

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The *American Seedling* is entirely free from mildew—a strong grower, and enormous bearer. Fruit very excellent, and superior to many larger kinds. Our stock of plants of the above is very large. Also, 50 of the best Lancashire varieties imported this season.

CURRENTS.

We have been preparing for years for the present immense demand, which we knew would arrive, for this very excellent fruit. Our stock, without doubt, is the largest and best in the country, and comprises all desirable varieties. We invite special attention to our offers in Catalogue—of *Cherry*, *Versaillaise*, *Fertile de Angers*, *White Grape*, *Victoria*, *La Hative*, and *Black Naples*.

ASPARAGUS.

Very fine roots, 1, 2, and 3 years old.

RHUBARB.

Myatt's Linnæus and *Victoria*. Best varieties.

POTATOES.

Early Goodrich (the best early), *Harison* (the best late). We offer 8,000 bushels of the latter this season, of our own growing.

For Complete Lists of Small Fruits by Mail, see February No. of *Agriculturist*, page 72, and 43d page of Catalogue.

ALL ORDERS ENTERED AS RECEIVED, AND FILLED IN ROTATION, OR AT TIME DESIGNATED BY PURCHASER.

BY MAIL.

KNOX'S COLLECTIONS OF VEGETABLE & FLOWER SEEDS,
NEATLY PUT UP, AND
POST-PAID.

COLLECTION No. 1, PRICE \$10.

Comprises the following, suitable for cropping a garden of HALF AN ACRE, producing sufficient vegetables for an ordinary sized family throughout the year, viz.:

Beans.—1 pint each *Valentine*, *Early Mohawk* or *Six Weeks*, and *Large Lima*.
Cauliflower.—1 pkt. *Early Erfurt*.
Cabbage.—½ oz. each *Early Oxheart*, *Early Winningstadt*, *Late Flat Dutch* and *Drumhead*.
Celery.—1 pkt. *White Solid*.
Cress.—2 oz. *Curled*.
Cucumber.—1 pkt. each *Early Frame* and *Long Green*.
Carrot.—½ oz. each *Early Horn* and *Long Orange*.
Corn.—1 pint *Large Sugar* and *Stowell's Evergreen*.
Egg Plant.—1 pkt. *New York Improved*.
Lettuce.—1 pkt. each *Early White Cabbage*, *Curled Swiss* and *Drumhead*.
Melon (Muske).—½ oz. *Green Citron*.

Melon (Water).—1 oz. *Mountain Sprout*.

Beet.—1 oz. each *Extra Early Bassano*, *Early Blood Turnip* and *Long Blood*.

Okra.—½ oz. *Dwarf*.

Onion.—½ oz. each *Red Wethersfield*, *White Silver Skinned* and *Yellow Danvers*.

Parsley.—½ oz. *Extra Curled*.

Parsnip.—1 oz. *Hollow Crowned*.

Pepper.—1 pkt. *Bull Nose*.

Pumpkin.—1 oz. *Cashew*.

Peas.—1 quart each *Landreth's Extra Early*, *Champion of England* and *Blue Imperial*.

Radish.—1 oz. each *Early France*, *Early Scarlet Short Top* and *White Turnip Rooted*.

Squash.—½ oz. each *Early Yellow Bush*, *Boston Marrow*, and *Hubbard*.

Spinach.—1 oz. each *Round Leaved* and *Prickly*.

Tomato.—1 pkt. each *Tilde*, (true, very fine), *Extra Early*, and *Large Smooth Red*.

Turnip.—1 oz. each *Red Top Strap Leaved*, *Purple Top Ruta Baga*.

Herbs.—1 pkt. each *Sage*, *Sweet Marjoram* and *Summer Savory*.

COLLECTION No. 2, PRICE \$5.

Comprises one-half of No. 1, same varieties; will crop a GARDEN of a QUARTER OF AN ACRE, sufficient for the use of a small sized family.

FLOWER SEEDS SENT FREE BY MAIL.

Collections which are Highly Commended for their Utility and Excellence.

Assortment No. 1.	8 new and superb varieties.	...\$1 00
"	" 2, 20 "	... 2 00
"	" 8, 20 good showy "	... 1 00
"	" 4, 50 "	... 2 00
"	" 5, 100 " (many new) "	... 4 00

Our New Descriptive Seed Catalogue,

Gives full descriptions of NEW, RARE and MOST DESIRABLE varieties of VEGETABLES AND FLOWERS. PLAIN, SIMPLE, and FULL instructions for sowing, planting and after management—prices in packages or by weight, by mail or otherwise, and much other valuable information. Sent to all applicants enclosing 10 cents.

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Grower and Importer,

P. O. Box 155, 137 Liberty-st.,
Pittsburgh, Pa.

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TERMS—(cash before insertion):

Ordinary Pages, \$1.50 per line, \$2 per line, \$5.00 per page (open without cutting), \$2 per line.
Business Notices—\$2.50 per line of space, each insertion.

AGRICULTURAL AND HORTICULTURAL
IMPLEMENTS, of the latest and best improved, and of every variety required for the FARM and GARDEN—WHOLESALE and RETAIL. These are manufactured mostly by ourselves, and are *fully warranted in all respects*. Catalogues furnished on receipt of stamps.
E. H. ALLEN & CO., 139 and 131 Water-st., NEW YORK.

SEED POTATOES

New English Varieties.

Wheeler's Milky White.—A seedling from the Fluke, a second early variety of delicious flavor, and in color as white as milk, remarkable for its freedom from scab, highly prized by English cultivators.

Monn's Pride.—A very early Kidney Potato—of medium size, and of excellent quality—due for forcing.

British Queen.—Early and of fine quality.

In consequence of the limited supply of the above, we offer them in *One Pound* lots, which will be mailed to any address upon receipt of One Dollar for each package.

All orders for the following varieties received previous to the 20th of March, will be filled at the prices quoted, after which prices will be subject to variations in the market.

	peck.	bu.	box.
Early Goodrich	1.00	\$3.00	\$8.00
Harison	1.00	6.00	15.00
Gleason	1.00	3.00	7.50
Chilton	1.00	3.00	7.50
Cuzco	1.00	2.50	6.00
Early Sebce	1.00	3.00	7.50
St. Steven	1.00	2.00	5.00
Dykeman	1.00	3.00	7.50
Early Sovereign	1.00	3.00	7.50
Jackson White	1.00	2.50	6.00

Patterson's Celebrated English Seedlings.

Napoleon, Victoria, Irish Blue, Scotch Blue, Skerry Blue, Forfarshire Red, Regent, Seedling Rock, also **King of the Potatoes, Early Frame, Red Regent, Sutton's Early Race Horse, and Early Handsworth**, (the two earliest known), etc. **Four Pound Packages** of either of the above varieties will be mailed to any address, post-paid, upon receipt of **One Dollar**. Six packages, \$5.00; twelve packages, \$9.00. No less than **\$1** worth, nor more than one variety in a package, will be sent by mail.

Our Descriptive Potato Catalogue mailed to all applicants.
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41 Park Row, New York, Box 512, P. O.,
Or, 231 Main-st., Springfield, Mass.

New Varieties of the FRENCH HYBRID GLADIOLUS.

The improvement in the recently introduced sorts is very great, some of the shadings are superb, and entirely new combinations of colors are offered. For description send for our **Flower Seed Catalogue for 1868**.
J. M. THORBURN & CO.,
15 John-street, New York.

Gladiolus, Lilies, Tuberoses, Tigridias, &c., FOR SPRING PLANTING.

Full descriptions of these may be found in our new illustrated Price Catalogue. Mailed on receipt of 10 cts.
Address: CUBBS & COBB,
248 Washington-st., Boston, Mass.

New Strawberryberries, by MAIL.

NAPOLEON III.
The finest ananar berry in cultivation, \$3 per dozen.
PERPETUAL PINE.
A new, perpetual variety of the Pine class, \$3 per dozen.

JUCUNDA, 75 cts. per doz.; \$3 per 100.
Send stamp for **Illustrated Price Catalogue**, with descriptions of the foregoing varieties.
EDWARD J. EVANS & CO., York, Penn'a.



The most economical Crate and Basket in use. Neat, strong, compact, and well ventilated.
Agents wanted in all the fruit growing districts.
Orders for Western N. York direct to S. J. FREEMAN, Box and Basket Co., New Canaan, N. Y. CIRCULARS SENT FREE.

Nansemond Sweet Potatoes for Seed.
Price \$10 per barrel of 3 bushels; \$6 per half barrel. Reasonable discount on large orders. Plants also in proper condition at low rates. This variety is successfully grown at the north. Send for our Circular of directions, etc.
Address MURRAY & FOSTERS Crossings, Warren Co., Ohio.

All the New Tomatoes.

These are fully described in our new illustrated price Catalogue. Mailed on receipt of 10 cts. Address: CUBBS & COBB, 231 Washington-st., Boston, Mass.

HARISON POTATOES.

We offer 3000 Bushels of this superior potato, at lowest market price.

Send 10 cts. for Descriptive Seed Catalogue, and Illustrated Potato Circular.

J. KNOX,
Box 155, Pittsburg, Pa.

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Best hand Seed Sower in use. Prices \$6 to \$18. The seed is distributed by a Reciprocating Seed Box; there are no mechanical movements inside the Box. Clipping Hand Hoe for pulverizing the soil and destroying weeds. Has adjustable blades and handle. Liberal discount to the trade. Send for Illustrated Circular.
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CRANBERRIES—By A. B. Crandall.

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Choice Seeds from Rhode Island.

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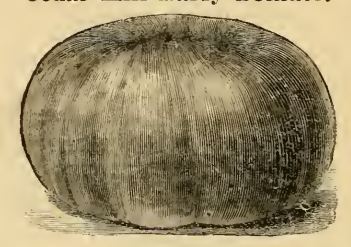
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Celery, New Dwf. White, Boston Market	1.00 "	12.00			
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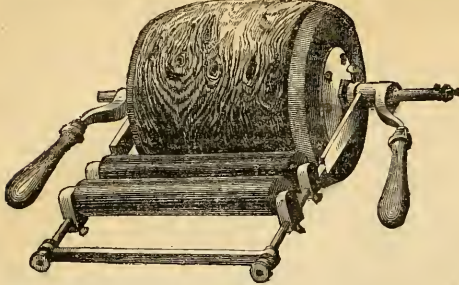
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This Machine sows all kinds of Fertilizers, such as *Guanos*, *Peruvian Linn. Fossils and Salt*, in all conditions and without choking, and any desired amount. Also, all kinds of grain. For particulars, address OSBORNE, FOSTER & CO., Pahrny, Wayne Co., N. Y.



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American Agriculturist for Jan. 1868, says: "We have hitherto been too much dependent upon England for our best cutlery, and sheep shears were no exception. Hardly willing to trust, without the test of use, our own favorable impression in regard to the excellence of these sheep shears, made by Henry Seymour & Co., of this city, we have submitted them to the judgment of practiced sheep shearers, who are much pleased with them, and to experts in steel manufactures, who pronounce an unqualified approval, confirming us in our own opinions."

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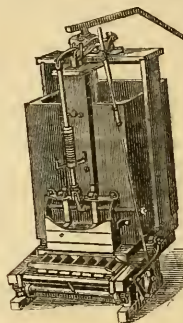
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AIR CYLINDER GRAINING MACHINE.

This Machine grains in Oil Colors, perfect imitations of Walnut, Rosewood, Chestnut and Oak, in all their varieties.



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Prices range from \$20 to \$50, according to capacity, which is from

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A competent person sent to set up machines and give all necessary instructions **FREE of Charge.**

No pay asked until satisfaction given. Send for Circular to

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The Standard Churn of our Country.

JULIEN CHURN AND BUTTER WORKER.

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The Julien Churn offers the above named Churn in its various sizes to dealers and butter makers, as the staple Churn of our country. It is now in practical use in various portions of the Union, and

Purchasers will find it to be

1st.—A perfect butter maker, always producing the largest possible quantity of the very best butter, leaving the butter-milk thin and blue.

2d.—A perfect butter worker and solver.

3d.—Easily operated and cleaned; a child can work it.

4th.—It is the strongest, handiest, and most durable Churn in the market.

PRICES.

No. 2 holds 8 gallons and churns 5 gallons, \$10.00.

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Tin or Shingle, New, Old, or Leaky. Will not corrode metal, exposure has no effect. Warranted pure. Furnished or applied by CHARLES DIMON, 181 Pearl-st., New York. Send for Circulars. P. O. Box 694.

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The Old Mt. Vernon Iron Works, established 1831, notwithstanding the general depression in trade, are manufacturing 15 to 25 Engines and Mills per Month, to supply the large and increasing demands for their

Stationary Engines, for Mills, Factories, Furnaces, &c., of from 8 to 225 Horse-Power.

Portable Engines of from 7 to 30 Horse-Power.

Thrashing and Plantation Engines, Mounted on Wheels.

Circular Saw Mills of all sizes.

Reed & Buckingham's Patent Portable Spring Grist Mills, and Portable Bolts for same.

COMPLETE GRIST

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Machinery, including Best French Burr Mill Stones, Old Dutch Anchor Bolting Cloths, Gearing, Shafting, and all necessary Fixtures, Drafts and Plans for the erection of the Building and arrangement of the Machinery are furnished without charge.

This Firm was the first to commence the practice of furnishing complete Machinery and Fixtures for Saw and Grist Mills, and experienced Millwrights to erect and put the same in operation; hence their unprecedented success, and reputation for building the best Engines and Mills in use.

All their machinery is made from the best material, and constructed in the most thorough and substantial manner, and warranted to give satisfaction.

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CORN SHELLER.

The best in the World is the improved

Burwell's Patent Iron Corn Sheller,

to be found everywhere, and of the Manufacturers,

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SCOTT'S PATENT GRINDER.—For sharpening Sower and Reaper knives. A simple and effective machine. Manufactured and sold by Assignees of Patent, RICHARDS & CO., Ann Arbor, N. Y.

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INGERSOLL'S HAY AND STRAW PRESSES, INGERSOLL'S RAG AND PAPER PRESSES, INGERSOLL'S HIDE AND HAIR PRESSES, BOTH HAND AND HORSE-POWER PRESSES,

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FOUNTAIN PEN, ONE FILLING WRITES ten hours. Gold pens and cases; pens required for 50 cts. Send stamp for Circular. G. F. HAWKES, 6 Nassau-street, New York.

\$10 a Day for All.—Stencil Tool Samples free. Address A. J. FULLAM, Springfield, Vt.

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Choice New Apples.

I select from 100 varieties 6 very fine new apples; should be in every collection. Vermont Beauty, Summer, Vermont Strawberry, Autumn, these two weigh 1 lb. each; Bush-wacker, Franklin, Kilbuck, Autumn, all large, Park Seed, Winter, large extra. Each, 3 cts., 10 cts.; the 6, 3 cts. each, \$2.00, by mail.

Rye, Westchester Co., N. Y.

Marblehead Mammoth Sweet Corn.

The ears are of an enormous size, often weighing between two and three pounds, very sweet and excellent for table use. My specimens of this Corn recently took the First Premium at two of the Annual Fairs of the Mass. Horticultural Soc. etc. Per package, 25 cents, or five packages for \$1.00. My seed Catalogue gratis to all.

JAMES J. B. GREGORY, Marblehead, Mass.

A GREAT ANNOUNCEMENT!!!!

Which will be commenced in No. 16, Ready Feb. 15th, of

THE NEW YORK WEEKLY,

The Best Story and Sketch Paper of the Age, a Thrilling Tale, entitled

THE WITCH-FINDER;

OR,

THE HUNTED MAID OF SALEM,

BY LEON LEWIS,

AUTHOR OF "THE SILVER SHIP," "THE WATER WOLF," "SYRIA, THE JEWESS," ETC., ETC.

A thoroughly authentic history of Salem Witchcraft has yet to be written. In the books treating of this subject, the atrocities that were perpetrated by the Witch Testers were classed as almost pardonable offenses, because committed under the delusion that the victims were gifted with supernatural powers, and could at will afflict any person with the most direful physical and mental ailments—such as blindness, deformity, or insanity. In those days every person who suddenly became ill, at once proclaimed that he was bewitched, and began reciting to mind the female on whom he had last looked, and who, it was thought, had prostrated him by the power of Witchcraft. The suspected party, as was natural, generally proved to be some unfortunate woman against whom the husband had long harbored a spirit of unaffection. The relatives of the sick person were at once summoned; after listening to the story of the individual supposed to be bewitched, they would proceed in a body to the dwelling of the unsuspecting victim, drag her forth, publicly accuse her of Witchcraft, in having afflicted their suffering relative, and make her submit to

The Witch-Finder's Test.

Tears and entreaties were of no avail; the expositions of friends only made matters worse by leaving them open to suspicion, and it only happened that in endeavoring to shield the unfortunate victim from the fury of the exasperated multitude, even the friends of the supposed witch were compelled to undergo the tortures of

The Witch-Finder's Test.

These tests were as numerous as they were atrocious and diabolical, and frequently resulted in the death of the victim. When proven guilty of Witchcraft, death by the most cruel means was of course the sentence; but it was not a rare occurrence for

The Witch-Finder's Test

to put an end to the victim's sufferings by death, just as she was about to be declared innocent.

At this distant day, and in this age of enlightenment, there will be found many who will discredit the following brief description of one of the many tests resorted to by

The Heartless Witch-Finder.

The Salemites believed that it was impossible to drown a witch—that if thrown into a river, she would certainly be able to make her way to the shore. Acting upon this belief when a woman was suspected of Witchcraft, she would be compelled to undergo the

Witch-Finder's Drowning Test.

She would be dragged to the nearest river, and plunged in at a considerable distance from the shore. In case the woman succeeded for a time in keeping her head above the surface of the water, that was considered positive evidence that she was a witch, and she would be stoned to death as she struggled with the remorseless waves. In this test the only proof of the woman's innocence of Witchcraft was when she could not swim, and therefore sank to rise no more! Innocent or guilty, it was death in either case! By drowning, she proved herself innocent; but if it appeared probable that she could save her life by swimming, she was stoned like a cat until she drowned!

Even crueller more atrocious than this was put in practice by

The Witch-Finder.

Private quarrels and ancient grudges were avenged by accusing innocent people of Witchcraft. Young wives were ruthlessly torn from loving husbands, accused before the gaping, ignorant and superstitious populace,

Branded as Witches,

and after being marched through the town, that everybody might look their last upon the

Female Demons,

the terrified women were given over to the villanous wretches who had achieved notoriety as

Witch-Finders.

The remarkable story which is soon to appear in the

New York Weekly,

is a reliable expose of the atrocities enacted in the

Days of Salem Witchcraft.

The tale is founded on authentic records and data, and is entitled

THE WITCH-FINDER;

OR,

The Hunted Maid of Salem.

The plot of the story is original, although it has for its basis an accurate account of the cruelties that were perpetrated during the period of

Salem Witchcraft.

It should be borne in mind that in No. 16 of the NEW YORK WEEKLY will be commenced "THE WITCH-FINDER; OR, THE HUNTED MAID OF SALEM." The New York Weekly is for sale by every News Agent. Price Six Cents per copy. Specimen copies sent free.

Among the principal characters portrayed in this exciting story is

The Witch-Maid.

The most disreputable person in Salem, at the time of the Witchcraft excitement, was an old Boardman, who had achieved a devilish notoriety as a Volunteer Accuser, a Witch-Finder, and a Witch-Discoverer. This heartless miscreant practiced various jugglery under pretense of distinguishing a witch from an innocent person, such as drawing blood, saying the Lord's Prayer backwards, etc.

The Hunted Maiden.

Another interesting personage of those times was HESTER WAYNOK, the daughter of a Colonial merchant—a beautiful and child-like girl, whose villainous Boardman persecuted with his attentions, and afterwards hunted as a Witch.

The White Angel of Salem.

A third and most remarkable personage of those dark days was a mysterious being who appeared in Salem when the delusion was deepest. She possessed the aspect of a young lady; but a strange peculiarity was noticed in her appearance—she was strangely white, and her skin shone so brilliantly that many supposed her to be an angel. She went about doing good, opposing the Witch-Hunters, releasing prisoners, helping widows and orphans, etc.

Whoever would have full particulars concerning these and a score of other inhabitants of Salem, in the days of Witchcraft, must read the thrilling and beautiful narration just drawn from the historical collections of Massachusetts, and entitled

THE WITCH-FINDER;

OR,

The Hunted Maid of Salem.

By Leon Lewis,

Which will be commenced in No. 16 of

The New York Weekly.

The great success of the NEW YORK WEEKLY is in a measure due to the scrutiny exercised in compiling the contents, so that the slightest offensive word or passage may be avoided. Heads of families, fully aware that we expunge from our manuscripts every expression that might contaminate the young, present

The New York Weekly

to their wives and children, fully confident that its teachings will have a beneficial effect, and that its stories, while they inculcate good morals, also exhibit the punishment that must attend vice.

The New York Weekly

are varied, to suit the popular taste; they are instructive, entertaining, and amusing. The thoughtful will find in

THE NEW YORK WEEKLY

subjects that will induce reflection, the knowledge seeker will be edified and learn the social and peculiar to various parts of the world, while the humorously inclined can always find in the quaint writings of JOSEPH BILLINGS, PHILANDER BOSTWICK, MARK TWAIN, JOHN Q. HILL and other humorists, something that will provoke merriment and laughter.

As we have not space to particularize, at great length, the numerous features of THE NEW YORK WEEKLY, we will just mention some of the standing attractions:

ADVERTISEMENTS.—Our Classified Department in which the editor indulges in familiar chat with his correspondents, replies to various queries put to him, and disseminates information that is of the greatest popular interest.

THE KNOWLEDGE BOX.—In this column will be found Domestic Recipes, Scientific Notes, Hints to Farmers and Gardeners—in fact, suggestions that will prove useful to all classes of society.

ITEMS OF INTEREST.—The important events of the world are epitomized in this column, and their essence given in pithy sentences.

PLEASANT PARAGRAPHS.—This department is entirely devoted to articles of a humorous nature, and it forms an excellent dessert in the mental feast which the columns of THE NEW YORK WEEKLY contain every week.

The above are the regular departments of

THE NEW YORK WEEKLY.

besides which we have

SKETCHES OF EVERY DESCRIPTION.

LOVE SKETCHES.

SKETCHES OF ADVENTURE.

SKETCHES OF BORDER LIFE.

SEA SKETCHES.

With such attractions, who can wonder that

THE NEW YORK WEEKLY

is considered

THE BEST LITERARY PAPER PUBLISHED.

THE AMERICAN FRUIT CULTURIST,

BY JOHN J. THOMAS.

Is a superb book of over 500 pages, profusely illustrated with 480 accurate wood engravings.

It contains practical directions for the Propagation and Culture of Fruit Trees, and Small Fruits in the

Nursery, Orchard, and Garden.

And is richly bound in extra muslin, full gilt back, sent free by mail on receipt of \$3.00 by

WM. WOOD & CO., Publishers, New York.

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ESTABLISHED 1861.

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22,000 HALF CHESTS by ship *Golden State*.
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In addition to these large cargoes of Black and Japan Teas, the Company are constantly receiving large invoices of the finest quality of Green Teas from the Moyne district of China, which are unrivaled for fineness and delicacy of flavor.

To give our readers an idea of the profits which have been made in the Tea trade, we will start with the American houses, leaving out of the account entirely the profits of the Chinese factors.

1st. The American house in China or Japan makes large profits on their sales or shipments—and some of the richest retired merchants in the country have made their immense fortunes through their houses in China.

2d. The Banker makes large profits upon the foreign exchange used in the purchase of Teas.

3d. The Importer makes a profit of 30 to 50 per cent in many cases.

4th. On its arrival here it is sold by the cargo, and the Purchaser sells it to the Speculator in invoices of 1000 to 2500 packages, at an average profit of about 10 per cent.

5th. The Speculator sells the Wholesale Tea Dealer in lots at a profit of 10 to 15 per cent.

6th. The Wholesale Tea Dealer sells it to the Wholesale Grocer in lots to suit his trade, at a profit of about 10 per cent.

7th. The Wholesale Grocer sells it to the Retail Dealer at a profit of 15 to 25 per cent.

8th. The Retailer sells it to the Consumer for ALL THE PROFIT HE CAN GET.

When you have added to these zizur profits as many brokerages, cartages, storages, cooperages and wastes, and add the original cost of the Tea, it will be perceived what the consumer has to pay. And now we propose to show why we can sell so very much lower than other dealers.

We propose to do away with all these various profits and brokerages, cartages, storages, cooperages and wastes, with the exception of a small commission paid for purchasing to our correspondents in China and Japan, one cartage, and a small profit to ourselves—which, on our large sales, will amply pay us.

By our system of supplying Clubs throughout the country, consumers in all parts of the United States can receive their Tea at the same price (with the small additional expense of transportation), as though they bought them at our warehouses in this city.

Some parties inquire of us how they shall proceed to get up a Club. The answer is simply this: Let each person wishing to join in a Club, say how much tea or coffee he wants, and select the kind and price from our Price List, as published in the paper or in circulars. Write the names, kinds, and amounts plainly on the list as seen in the Club Order published below, and when the Club is complete send it to us by mail, and we will put each party's goods in separate packages, and mark the name upon them, with the cost, so there need be no confusion in their distribution—each party getting exactly what he orders, and no more. The cost of transportation the members can divide equally among themselves. See club-list in Jan. No. of this paper.

Parties sending Club or other orders for less than thirty dollars had better send Post-office Drafts or money with their orders, to save the expense of collections by express; but larger orders we will forward by express, to collect on delivery.

Hereafter we will send a complimentary package to the party getting up the Club. Our profits are small, but we will be as liberal as we can afford. We send no complimentary package for Clubs less than \$50.

Parties getting their Teas of us may confidently rely upon getting them pure and fresh, as they come direct from the Canton House stores to our Warehouses.

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YOUNG HYSON (Green), 80c, 90c, \$1, \$1.10, best \$1.25 per pound.
UNCOLORED JAPAN, 90c, \$1, \$1.10, best \$1.25 per pound.
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GROUND COFFEE, 50c, 55c, 60c, 65c, best 40c per pound. Hotels, Saloons, Boarding-houses, keepers and Families who use large quantities of Coffee, can economize in that article by using our FRENCH BREAKFAST AND DINNER COFFEE, which we sell at the low price of 50c. per pound, and warrant to give perfect satisfaction.

Consumers can save from 50c. to \$1 per pound by purchasing their Teas of the

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Nos. 31 and 33 VESEY STREET.

Post-Office Box, 5643, New York City.

Evidence After Two Years' Trial.

Treasury Department,
Fourth Auditor's Office, Washington, Dec. 31, 1867.

GREAT AMERICAN TEA COMPANY,
31 and 33 Vesey Street, New York.

The accompanying list completes the second year of the existence of this Club, and what I said to you one year ago, I can say again now, and that is, that the Club has been highly gratified with the goods received of your house, and is abundantly satisfied that better articles and lower prices can be obtained there than at any other "house" with which we are acquainted.

If two years' experience is any criterion for judgment, then the public can rest satisfied that "THE GREAT AMERICAN TEA COMPANY" is no humbug.

Very respectfully yours,
L. CASS CARPENTER.

NOTICES OF THE PRESS.

From the American Agriculturist.

THE GREAT AMERICAN TEA COMPANY.—TO QUERIES:—Before admitting their advertisement, we learned that a large number of our clerks and others had for several months been buying their Tea and Coffee from this Company, without its being known who they were, and that they had been highly pleased with their purchases, both as to quality and price, and were all recommending their friends to the same course. As we have published the advertisement for many months, and received no complaints, we conclude "there is no humbug about the establishment."

N. B.—All villages and towns where a large number reside, by Clubbing together, can reduce the cost of their Teas and Coffees about one-third (beside the Express charges), by sending directly to "The Great American Tea Company."

BEWARE of all concerns that advertise themselves as branches of our Establishment, or copy our name either wholly or in part, as they are *bogus* or *imitations*. We have no branches, and do not, in any case, authorize the use of our name.

Post-Office orders and Drafts, made payable to the order of "Great American Tea Company." Direct letters and orders to the (as below, no more, no less)

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McLean's Little Gem, 1 foot, very early and sweet.....	\$1 10
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THE GREAT INSECT DESTROYER!

See Circulars of N. E. Portable Pump Co., Danvers, Mass.

AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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PUBLISHERS AND PROPRIETORS.
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VOLUME XXVII.—No. 4. 1120

NEW YORK, APRIL, 1868.

NEW SERIES—No. 255.



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PERCHERON HORSES.—Drawn from Life and Engraved for the American Agriculturist.

The name "Percheron" is now given to the best bred horses of the province of Perche, in France, where, as also in Normandy and Flanders, a class of heavy, powerful draught horses has been bred for years with great care. The origin of the breed is veiled in the obscurity of tradition, but it is supposed that its superior qualities are, in a measure at least, due to an intermixture of Barb blood. The qualities of the breed are such as adapt them preëminently to farm work. They are large, compact, very powerful animals; easily kept, of great endurance, and considerable speed, they show a remarkable grace and ease of action, and besides are noted

for docility and kindness of disposition. It is many years since horses of this breed were first imported into this country. Wherever they were kept they left their mark upon the stock of the country in a way to demonstrate their value. Yet, as they do not win laurels on the race-course, and thousands of dollars at trials of speed and bottom at our agricultural fairs, but have simply been of value to the farmers and to the breeders of draught horses, they have never been introduced and bred as they should have been, and are not generally known.

Several recent importations attest the growing interest taken in the Percherons. The

French Government and stock breeders are now fast becoming fully awake to the superiority of the noble race of horses which has its home upon the soil of France. We are more and more convinced that one great need of our agriculture is the possession of such a class of horses as the cross with the Percheron will give us. We see something of a similar strain of blood in the Kauek horse, which in a small compass possesses many of the excellent points and characteristics of the Percheron. The subject is one on which we shall hereafter have more to say, as the publishers will soon announce a new work upon the Percheron horse.

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AMERICAN AGRICULTURIST.

NEW-YORK, APRIL, 1888.

April is one of the most indefinite months; March work holds on into it, even though May weather prevails. Besides, there is almost always a great deal of work which inopportune rains will postpone and again postpone, quite into next month. There should be an early division of work, thus:—dry soil work, rainy day work, and work for fair days when the soil is wet; this makes three good divisions. Nothing should interrupt the work in the field and garden while the soil is in good condition for working. With proper diligence all that needs to be done indoors, or that can be done on rainy days, or while the soil is too moist to work, may be without infringing upon the good days for field work. If plans are not well matured for the summer campaign lose no time before forming them. If there are seeds to buy, tools to provide, or anything of that kind to do, delay not. If we begin the season with good "help," good teams, good tools, good seeds, all the manure we can get, and the best plans we can make, after doing all we possibly can we may rely upon Providence for sunshine and showers and fruitful seasons. Last year, amid the parched acres of the Interior, the fields of those whose drainage and deep tillage had been thorough, showed for miles as green oases in a barren desert, and at the East, where all was wet, it was undrained fields and those of shallow soils that uniformly produced the poor crops.

Hints about Work.

Review what was said in the March number with regard to winter grains, grass, sowing, and the working of wet soils.

Double Cropping.—Land to be suited for raising two crops in one season must be rich, in good tilth, and free as possible from weeds—in fact, like a good garden. Early potatoes, peas, onions, early cabbages, or any early soiling crop, may be followed by cabbages, rutabagas, common turnips, pickles, etc. Onions will leave the ground for carrots, which should have been sowed at the last hoeing between the rows, as directed in a "basket item," and cabbages may be set out before the potatoes are dug.

Animals.—Let stock of all kinds have frequent carding, and some hours of sunshine daily. Only at the South will the grass be forward enough to be pastured without danger to the crop. The temptation will be great to turn cattle upon the fresh meadows in case forage is scarce, but it will be much better both for the stock and the pasturage to feed a month longer, perhaps, on corn-stalks. The first lands that are fit to turn stock upon are unclaimed bogs, where the coarse grass growing in tussocks has been burnt off. Such grass is sweet and juicy early in the spring, and eaten with zest after the dry fodder of winter, but it soon becomes wiry and hard and will be refused by the stock. If fed off close when it first starts, it will keep on growing and furnish considerable feed. Nevertheless such land is very unprofitable property.

Horses shedding their coats may have a quart of oil-meal fed to each daily with cut feed or on a peck of carrots. Feed work-horses well. If kept steadily at work, calculate to feed so well that they will not fall off at all in flesh. Daily thorough grooming is worth four quarts of feed a day at this season, even for farm horses. Mares near foaling must be well fed, relieved from severe labor, and as their time approaches given roomy quarters in loose boxes. A box 10 feet square is none too large. A slightly loose condition of the bowels in breeding animals is always favorable, and should be induced by feeding roots, oil-cake or flaxseed.

Oxen.—Feed in proportion to work required, and often, give long noonings, and a chance to feed but not to fill themselves. Cattle, like all ruminating animals, eat fast and do their chewing afterwards. An ox that is put to work with his paunch full of unmasticated food is lazy, at least, and probably more liable than otherwise to be hurt by hard work.

Cows and Calves.—Refer to last month's hints; we have little to add here. Calves that are beginning to nibble grass a little may be tethered by the fences, where the grass starts green and sweet, and will thus learn to pick up a good living as soon as turned to pasture. Never let the scours run a day.

Sheep.—Take extra care of the lambs; if situated in their earliest growth they never catch up. The flock will need close watching to see that no ewes become gargely and their lambs lack milk, that none refuse to own their young, and that no lambs are hurt, or sick. Provide fresh water regularly, if not constantly, and by no means neglect salt.

Swine.—See hints for previous month. If the stock kept is not bred upon the farm, look out early for such pigs as you will need. If these can be had bred of full-blood sires, by all means secure them; they grow faster and fatten more easily.

Poultry.—There are some useful hints in the body of this number to which we refer the reader. Several painful diseases are apt to attack fowls in wet Springs, of which the worst are the Roup, and that disease so close akin to it as to be confounded with it, Swelled-head. Both are brought about by uncleanly apartments, and both are highly contagious; although the previous preparation of the system by exposure to wetness and filth seems to be an almost essential condition. A cold will run into roup if any rumpy fowls are about the yard. In bad weather, give an iron tonic, say a teaspoonful of tincture of iron, wet up in a quart of Indian meal, to a flock of twenty. About a tablespoonful of red pepper may be mixed with it to good advantage. In fact, this is one of the best preventives of disease, encouragements to laying, and promoters of health, which the poultry breeder can use. Taken early, these diseases may be cured by stimulants and cleanliness, but after the first stage they are usually fatal. Coops for hens and chickens should be placed on clean turf, where no chickens have been, at least since early last spring. Old coops should be well cleaned and whitewashed, and the water furnished to chickens should be so covered that they cannot foul it nor step in it, and protected from the dirt which the old hen throws in all directions by her scratching. We believe absolute cleanliness, on fresh ground, to be a perfect prevention of the gapes. Turkeys hatch and care for their own young best. Ducks' eggs, however, ought always to be put under hens. Keep ducks shut up until 8 o'clock every morning, or until all have laid. They lay an egg a day, if well fed, and will steal their nests and hide them where they are hard to find, if allowed their freedom. When the eggs are regularly removed they will not want to sit, but keep on laying until midsummer. Otherwise they sit as soon as they have a nest full of eggs.

Miscellaneous Work.—For hints about farm roads, fences, picking up stones, etc., see March number.

Buildings.—As soon as the weather is warm and settled, open and clear out eckars, both in house and barn, whitewash thoroughly, stop rat holes and cat holes. Roots still on hand may be put in barrels or boxes, that the bins may be cleaned. Outside painting may be done now, and a better surface be formed than if the work be done when the wood is thoroughly dry so that the oil will strike in.

Draining may often be done in the spring better than at any other season, and spring draining has this great advantage: the filling has all the summer to settle, and there is much less danger of the surface water washing in and gaining direct access to the tiles than when the draining is done in the fall. On this account it is advisable to do the draining on side hills, and where early in spring much surface water flows, at the present season of the year, after the heavy spring rains have passed.

Barn-yard Manure and Composts.—Where manure has any value in the estimation of the farmers, nobody has enough. Nevertheless, the prevailing notions about it are so crude that few take the pains they should to increase their manure both in quantity and quality. Manure the land well, or not at all. It does not pay to put on a sprinkling and get half a crop. Manure will secure a reward for labor that can be gained in no other way. Begin

the season by making arrangements for saving manure, and thoroughly composting it with muck, sods, or with other vegetable matter later in the season. Manure for use on land intended for rutabagas, or other crops sowed in summer, should be put in compost heaps and worked over once or twice before it is used. Poultry house manure mixed with soil or muck should be frequently worked over, and made fine for use upon corn in the fall.

Liquid Manure.—The leachings of the barn-yard, which ought always to flow into a tank especially prepared for them, are among the most valuable additions to a compost heap; not a particle of it should be allowed to waste, or wash away when rains cause an overflow. It will pay well to have a sprinkling cart to carry the liquid upon the lawns or fields, and it is especially useful upon the garden. During a moderate rain, or in showery weather, is the best time to apply it on all drained soils, where the water goes through, not over the surface.

Commercial Fertilizers.—Purchase with caution. Bones as bone-dust are less likely to be adulterated than as superphosphate. Guano (Peruvian No. 1) is a safe article to buy of an honest dealer, who buys of the Government agent. The more hands it goes through the more probability there is of its being adulterated. Fish guano is excellent and reliable; we have as yet learned of no frauds connected with it. Castor Pomace is to be had in small quantities and is excellent. Land plaster is little subject to fraud. Leached ashes are often adulterated with coal ashes, but this fraud is easily noticed. Get along without buying manures, if possible, but if you sell either hay or straw, be sure to make good the wrong you do the soil by spending all you get for manure of some sort, and keep the soil improving.

Spring Grains.—Wheat and Barley should be pickled in a strong brine and dried with lime before sowing, to destroy the smut. Sow as early as the ground is brought into fine order, using about 5 to 7 pecks of wheat, 2 bushels to $2\frac{1}{2}$ of barley, and $2\frac{1}{2}$ of oats. The later the grain is sowed the more seed should be used. Heavy, plump seed, free from weed seed, is of prime importance. No rank, heating manure should be used, but fine compost, or applications of commercial fertilizers, such as 100 to 250 pounds of guano to the acre, or 300 to 500 pounds of bone-dust for wheat or barley, and leached ashes, wood ashes, or gypsum, for any spring grain. Nitrogenous manures make oats run to straw.

Peas.—This crop should be sown early. In light soils put the seed in deep. It should go upon soil manured last year, and free from weeds. A common practice is to scatter the peas by hand liberally in every third furrow. The furrows should be not more than four to six inches deep, the depth depending on the soil. Broadcast sowing and drilling are more commonly followed, the latter practice being usually preferred on warm ground. Peas and oats sowed together is a favorite crop with many good farmers, but as nearly a full crop of each may be produced, the land must be mellow and rich.

Root Crops.—Sugar beets, mangels, parsnips, and carrots, may be sown as early as the ground can be well prepared. These crops can hardly have too rich or well-worked soil, yet they will reward labor on soil which is far from being either as rich or as mellow as it might be. Be sure of good seed. Sow in straight drills so far apart as to allow of horse cultivation. Carrots may have the drills closest, but these should be at least 2 feet apart; 30 inches is none too far for the other roots named. Roots require a good deal of labor, but it is well spent.

Potatoes.—The earliest varieties are the ones for early planting. There is perhaps nothing better than Early Goodrich, or than the Sebée; the Dyke-man is common in most parts of the country, and the Early June may be had anywhere, and is very good. Plant good-sized seed, cutting the largest potatoes, and aiming to have the pieces fully as large as hens' eggs. Let the cut pieces dry a day or two before planting. Plant close, one piece in a place, and not less than 4 inches under ground on dry ground. Cover with a plow, riding up a little over the rows, and lay all flat as soon as the plants get above ground, with a wooden-toothed harrow, an iron one on its back, or with a bush harrow.

Work in the Horticultural Departments.

As a matter of convenience we arrange these notes under different heads, though we are well aware that many have but one garden for small fruits, vegetables, and even flowers. It is better to grow those things so than not at all, but it is on many accounts preferable to have separate compartments set off for the fruit, kitchen, and flower garden. The manuring and frequent working of the soil, so necessary to the production of the best vegetables, is not practicable where permanent beds of fruits are in the way, and while we appreciate the love for flowers that will have them under every disadvantage, we much prefer to see the onions grown at a distance from the tulips. Enthusiastic cultivators are often in a hurry to be at work with the first mild days of spring. It is always best to wait until the soil is in "working order" and will crumble rather than clod when turned by the plow or spade. Work must often be pushed, but never badly done; better do less and do it well.

Orchard and Nursery.

The present custom of packing trees in boxes has some advantages over the old one of baling with straw, but with all the care those that are sent a long distance are liable to detention in transportation and it will often happen that the trees, when opened, have a most unpromising look, the bark being badly shrivelled. In this case do not put the trees into water, but bury them, root and branch, in the soil. After a contact of a few days or a week with the moist soil, they will, unless very badly injured, come out as good as new. The land should be prepared, and everything should be ready for

planting the trees as soon as they are received. Cut injured roots smooth and shorten the tops. Make a hole broad enough to allow the roots to be spread; throw on some fine soil and work it in among the roots with the fingers, so that no hollow places will be left; put on more soil and press it down with the foot, and the tree will not need

staking to support it, although a stake to each tree is very useful in laying out the ground before the tree is planted, and afterwards in enabling its position to be more readily seen in cultivating.

Grafting is to be done upon the plum and cherry before the buds have started. Other trees may be worked after the buds have swelled.

Root-grafts and Cuttings are to be planted in a rich, mellow bed as soon as the soil can be prepared.

Seeds of all kinds for raising young nursery stock should be sown as soon as possible.

Insects have been sufficiently noticed in previous months; continue to destroy them. See article on bark-louse on page 134, and do not set out a tree that is infested with this scaly pest on any account.

Fruit Garden.

If constant pleading would effect it, every farm would have a fruit garden, and every farmer's table would have an abundance of fruit. A few neglected currant bushes and a run-out strawberry patch too often supply all the summer fruits. We mean a fruit garden which shall be planted and cared for as furnishing necessary food rather than a luxury. Have strawberries, raspberries, blackberries, etc., not by the stunted tea saucer fall, but a big sudsish, heaped at that, at every meal. There is health, comfort, and economy, in a fruit garden. So have one. Half an acre or an acre to a good-sized family is not too much, and let the children do all but the heavy work. If limited in means, begin with strawberries and currants. Choose a good soil near the house, manure and plow it thoroughly, and plant these, at least, and as many more as can be had.

Strawberries.—Eighteen inches apart in rows two feet apart is a good distance. Set as early as possible. If any blossom buds appear this year pick them off. Keep the ground clear of weeds by use of the hoe, and cut the runners off. The plants will form large stools and next year give a good crop of fruit. As to varieties, the Wilson is the most gen-

erally successful, but not the best. Jucunda is fine in heavy soils, and the Agriculturist in light ones. Each locality has some favorite sort. Near Boston, nothing does as well as Hovey's Seedling, which being pistillate needs the Boston Pine or some other with perfect flowers to be planted near it. Beds that were covered last fall should have the straw or other mulch removed from over the crowns.

Currants are easily raised from cuttings, and rooted plants may be had at moderate prices. Cuttings should have been made earlier, but in many places will do well if put in now. See page 88 last month. Versailles and White Grape are the best, but have some at any rate. Old and neglected bushes may be made to produce better fruit and more of it by cutting out a good part of the old and stunted wood, and leaving an open, well-balanced bush. Spade in good manure around them.

Blackberries and Raspberries. See last month's notes.

Gooseberries are propagated the same as currants. It is useless to try any but American varieties.

Grape Vines that have been covered should be placed upon the trellis. Plant vines of some kind. If there is room for anything, plant a grape vine of some kind. See page 144 for treatment of young vines.

Figs may be tried by those who have sheltered places in a mild climate; cover them in winter.

Kitchen Garden.

No matter how rich the garden may be thought to be, most things will be benefited by more manure. Regular market gardeners use from 50 to 100 tons of stable manure, or its equivalent, to the acre. See last and previous months for hints on preparation of the soil, hot-beds, cold frames, etc.

Plant in rows, as far as possible, as this is much more convenient in working than the old-fashioned way of dividing up the garden into small beds.

A marker will be found very convenient in laying off the rows. It is made like a heavy wooden rake, with teeth 12 inches apart on one side and 9 inches apart on the other. By dragging this along the prepared ground, lines for planting are marked.

Seed-beds will be needed by those who do not use glass for starting their plants, and for plants for later crops. The soil should be rich and light, of a nature that will not become compacted or caked. Many failures with seeds are due to the inability of the delicate plant to force its way through the heavy, baked soil. Sow here all plants that are to be transplanted, such as cabbages, celery, sweet herbs, etc.

Varieties.—It is of great importance to have good seeds of good kinds. Do not delay getting at once all that may be needed. See last month, pp. 90 and 102.

Asparagus and Rhubarb.—Remove the litter, and fork in a good dressing of manure. In places far from the sea a liberal salting is beneficial to asparagus. Make new beds as previously directed.

Beans.—Plant bush sorts as soon as danger of frost is past. Limas should be left until the ground is warm.

Beets and Carrots.—Sow early sorts in drills a foot apart, or in two-foot drills with radishes between.

Cabbages and Cauliflowers.—Transplant from cold frames and from hot-beds; in the latter case the plants must be properly hardened by exposure. Sow seeds in the open ground in well-prepared beds.

Celery.—Sow in seed-bed in rows 8 inches apart.

Chicory.—Divide clumps and number new plantings, putting the small bulbs 6 inches apart.

Cress or Peppercress.—Sow a small quantity every ten days to keep up a supply. Dust the young plants with air-slaked lime, if insects trouble them.

Cucumbers may be had quite early by planting seed in frames from which other plants have been removed, giving, of course, plenty of manure.

Egg Plant.—Sow seeds in hot-bed, which should have a covering of mats on cold nights.

Garlic.—Sets obtained by breaking up the bulbs are planted 6 inches apart in foot rows.

Horseradish.—Plant as directed on page 23, (Jan.) or between the early cabbages, to occupy the ground after that crop comes off. Drop straight pieces

of roots in holes made between the cuttings and at the same distance that they are apart. Let the top of the set be at least 3 inches below the surface. Never plant crowns if pieces of root can be had.

Herbs.—Sow in seed-bed where the ground is dry and warm; Sage, Thyme, Sweet Marjoram, etc.

Lettuce should be kept in constant succession. If plants have been wintered in cold frames set them out a foot apart each way. Sow seeds in seed-bed.

Mustard.—Sow for salad or greens in foot rows.

Onions.—Put out sets, etc., as directed last month. Seeds are to be sown as soon as the soil is ready. Plenty of good manure is required, and it is best to make the bed each year in the same place. Sow fresh seed in foot or 15-inch drills.

Parsley.—Sow in open ground or in cold frames.

Parsnips.—Use last year's seed only; sow only in rich, deep soil, in drills 15 to 18 inches apart.

Peas.—The distance will depend upon the height the variety grows. Dwarfs will do a foot or 18 inches apart, while those requiring brush will need to be 3 or 4 feet or more distant.

Peppers.—Sow in hot-bed and treat like Egg Plant.

Potatoes.—Plant only the early sorts in the garden. Use good-sized seed, and drop a foot apart in manured drills that are a foot apart.

Radishes.—Light, warm, and rich soil is necessary. They may be sown between rows of slower crops or by themselves. Sow a portion every ten days.

Salsify or Oyster Plant.—Treat the same as carrots.

Spinach.—Cut that which has been wintered for use and sow for a fresh supply in 18-inch drills.

Swiss Chard.—A beet, the leaves of which make excellent summer greens. Cultivate like beets.

Sweet Potatoes.—Better buy plants, if but few are wanted. They are started by putting the potatoes in a hot-bed and covering with about 2 inches of rich compost. Give water and air as needed.

Tomato plants in hot-beds when large enough to handle may be potted and placed under glass or pricked out into another hot-bed. Seed may still be sown under glass, or for late crops in open ground.

Turnips.—Sow early sorts as soon as possible.

Hot-beds will need special attention to keep the plants from hurrying. Water, if needed.

Flower Garden and Lawn.

Much of the work indicated in previous months is still to be done. Get all rough work out of the way as soon as possible, and have all transplanting of ornamental trees and shrubs, excepting evergreens, done as soon as may be. The making of lawns are sufficiently treated of on page 144.

Borders need to be carefully forked over, first giving a coat of well-decomposed manure, and

Edgings made. Box may be re-set and grass edgings laid. We wish some one would make a nice tile edging. Bricks set diagonally may be used as a substitute along paths where there is much travel.

Herbaceous Plants, where they have stood two or three years, will often need dividing; do this early. We gave a description of some good varieties in March last. Seeds of perennials may be sown.

Hardy Annuals may be sown when the ground is dry, but tender ones are best left until May, unless they can be started under glass. Seedsmen's catalogues designate whether the plants are hardy or tender.

Bedding Plants should not be put out too early. They are generally sub-tropical things, and a cold spell gives them a check, if it does not kill them.

Forced Plants.—In cities and towns plants that have been forced are often offered for sale. As a general thing they are worthless for future use, although for present gratification they are often worth the price asked.

Climbers.—The hardy climbers are great favorites with us, and we would introduce them wherever it is possible—on verandas, fences, and to cover unsightly objects. Our woods supply the Virginia Creeper, Moon-seed, Wax-work and others, and

the nurseries have a long list of the exotic ones.

Roses.—Where there is room, have a plenty of June roses, but in restricted gardens the China varieties will give the most satisfaction, as they bloom all the time. The varieties are so numerous that we must refer to the catalogues for a list.

Green and Hot-Houses.

These "hints" are of course intended only for amateurs who manage a small house themselves, and not for the regular gardener. Give air on mild days, guarding against sudden changes, and be prepared to warm up during a cold, damp spell.

Propagating for out-of-door planting should be going on, to supply the demand for bedding stuff. As soon as the plants have rooted in the sand of cutting bench, transfer to small pots of good soil.

Seeds of tender annuals may be sown for plants to use out of doors. Cover small seeds lightly. Start

Dahlias by placing their roots in a warm place, or if they have already started out off the sprouts with a portion of the root, and pot them.

"Foliage Plants," (as the garden term goes), such as Cannas, Colemans, etc., may be potted, as may

Tuberose; indeed the only way to get a satisfactory result from tuberose at the North is get them well started before they are put out.

Shrubs making their growth will need more water.

Insects will start into new vigor with the warm days of spring; apply smoke and other remedies.

Potted Plants.—It takes an amateur a long time to acquire courage to use the knife. It is often the case that plants go from year to year without being cut, and get more "lanky" and miserable each year. Cut back any plant that is in bad shape or shows a weakly growth, and repeat in fresh soil if needed.

Cold Grapery.

Here the heat of the house depends upon the sun, and its proper temperature is governed by the management of the ventilators. An artificial summer is to be created, the heat and moisture of which are to be kept suited to the vines by the care of the cultivator. The first thing to be done is to secure a uniform starting of the buds on the vine. If the vine were put up in its place at once the upper buds would get the advantage of lower ones and the growth would be unevenly distributed. To counteract this, the vine is so suspended that it will form a curve, with the upper end of it hanging down. By varying the point of suspension and the curvature of the vine, a uniform start can be secured, and when the shoots have made a growth of two or three inches, the vine is to be tied in place. If the upper buds fail to start, or if the vine shows cracks and bleeding, some injury has happened to it during the winter, and it must be cut back to a good bud which will furnish a cane to take the place of the old one. The temperature of the house in the early part of the month should be about 65°, which towards the end of the month may be increased to 70° or 80°. Sudden changes of temperature must be avoided, and a favorable moisture be maintained by a free use of the syringe morning and evening.

Commercial Markets—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for the month ending Mar. 14, 1883, and for the corresponding month last year:

TRANSACTIONS AT THE NEW-YORK MARKETS.									
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.	Butter.	Eggs.	Chickens.
23 days this month	131,000	987,000	23,000	41,000	109,000				
23 days last month	131,000	1,194,000	4,500	51,000	114,000				
SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.	Butter.	Eggs.	Chickens.
23 days this month	266,000	87,000	1,540,000	150,000	973,000	873,000			
30 days last month	244,000	98,000	1,291,500	95,500	1,336,500	1,018,000			
2. Comparison with same period at this time last year.									
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.	Butter.	Eggs.	Chickens.
23 days 1882.	131,000	987,000	23,000	41,000	109,000				
23 days 1881.	111,000	916,000	139,000	15,000	47,500	76,000			
SALES.	Flour.	Wheat.	Corn.	Rye.	Barley.	Oats.	Butter.	Eggs.	Chickens.
23 days 1882	266,000	957,000	1,540,000	153,000	973,000	873,000			
23 days 1881	164,500	1,565,000	236,000	516,000	928,000				

3. Exports from New York, Jan. 1 to March 14:

	Flour.	Wheat.	Corn.	Rye.	Oats.
1882	130,105	437,527	1,297,749	64,802	16,424
1881	117,930	185,506	1,342,249	114,808	43,961
1880	106,479	240,285	1,285,287	73,782	32,257
1879	374,759	128,900	101,046	141	15,643

4. Stock of grain in store at New York:

	Wheat.	Corn.	Rye.	Barley.	Oats.	Malt.
1878.	bush.	bush.	bush.	bush.	bush.	bush.
Mar. 10.	1,175,132	1,519,321	43,442	46,614	1,724,212	34,102
Feb. 11.	1,507,679	1,703,201	19,411	63,032	2,154,101	43,257
Jan. 13.	1,647,415	1,484,133	189,330	161,313	2,379,826	62,389

1887.

	Wheat.	Corn.	Rye.	Barley.	Oats.	Malt.
Oct. 12.	941,329	1,974,706	134,543	361,293	2,246,732	52,135
Nov. 15.	167,688	567,664	7,900	32,795	800,897	57,977
Dec. 15.	205,525	1,154,420	7,134	29,791	1,044,825	52,135
Jan. 15.	90,114	863,724	32,725	12,376	590,549	48,882
Feb. 15.	245,590	1,800,789	65,886	21,390	2,366,463	54,700
Mar. 15.	278,279	217,976	11,910	16,613	378,985	16,311
May 15.	731,320	369,192	186,804	145,706	608,494	16,461

Gold has been depressed in price, since our last closing at 139½. Breadstuffs have been moderately active since our last, but quite variable in prices. The offerings of flour and wheat have been comparatively limited, but, toward the close, have run ahead of the wants of buyers, to the injury of prices, which close with a downward tendency. Corn has fluctuated materially through the month, but closes briskly and buoyantly, on an active home and export demand. Rye and Barley advanced in price, on light receipts, and a fair inquiry,—the former closing heavily, and the latter very firmly. Oats have been less sought after, and have been lower and irregular. Provisions have been in good request, but hog products have been unsettled in price, closing in favor of purchasers. Beef, Butter, and Cheese, close with an upward tendency. Cotton has advanced materially, on an unusually active movement, chiefly speculative; but it closes less firmly. Wool was in very brisk demand for a week or two, and quoted a shade higher; but the later dealings have been less extensive, the market closing about steady. Hay has been salable at full prices. Hops and Tobacco have been quiet. Seeds have attracted more attention, closing more firmly.

CURRENT WHOLESALE PRICES.

	Feb. 15.	March 14.
PRICE OF GOLD.		1881.
Flour—Super to Extra States	\$ 45 1/2	\$ 8 5/8
Super to Extra Southern	9 50	10 00
Extra Western	9 50	10 00
Extra Eastern	9 50	10 00
Superfine Western	8 45	9 50
Extra Eastern	7 15	8 25
CORN MEAL	5 00	5 50
White	5 00	5 50
All kinds of Kind and Amber	3 38	3 82
CORN—Yellow	1 32	1 32
White	1 35	1 35
OATS—Western	85	82 1/2
State	Nominal.	Nominal.
Barley	1 71	1 80
Hay—Bale \$ 100	1 05	1 05
STRAW—\$ 100	90	95
COTTONS—Middling	20 50	21 1/4
Good—Cotton of 1880	20 50	21 1/4
FRUIT—Live Geese	20	20
Thimble	3 00	3 25
Flax, bushel	2 60	2 85
SUGAR—Brown	11 50	12 1/4
MOLASSES—Cuba, prime	31	48
COFFEE—Java, Gold price	12	17 1/2
TOBACCO—Kentucky	38	40
Seed Leaf	3 50	4 00
WOOL—Domestic Floor	24	26
Domestic, pulled	21	22
California, unwashed	16	18
TALLOW	11	11 1/4
POSS—Moss, \$ barrel	22 57	23 16
Prime, \$ barrel	18 25	19 00
BEER—Plain mess.	13 00	14 00
LARD, in barrels	14	15
Butter—Western	23	24
State	40	40
CHEESE	8	10 1/2
PRAS—Canned	4	5
PRAS—Canned	1 55	1 60
Eggs—Fresh, \$ dozen	11	11
FRUIT—Kow, \$ dozen	11	11
Turkey, \$ lb	22	25
CAPTAINS	3	4
CRABAPPLES	4 00	5 50
CHERRIES	7 00	9 50

New York Live Stock Markets.

WEEK ENDING. Bees, Cows, Calves, Sheep, Swine.

	Bees.	Cows.	Calves.	Sheep.	Swine.
February 17.	4,793	81	582	26,002	9,000
February 24.	4,842	66	899	26,139	11,214
March 2.	4,829	74	631	17,473	11,639
March 9.	4,844	85	603	17,259	10,360

Total in four weeks, 18,818 397 2,925 86,875 42,753 150,693

do for previous 5 weeks, 25,521 424 3,072 123,133 56,918 197,181

Bees, Cows, Calves, Sheep, Swine.

	Bees.	Cows.	Calves.	Sheep.	Swine.
Average per Week.	479.3	8.1	58.2	2,600.2	900.0
do do last Month.	5,197	81	641	24,104	11,883
do do prev's Month.	4,793	74	544	20,999	17,743
Average per Week, 1887.	5,244	61	329	22,134	10,605
do do, 1886.	5,748	64	1,320	20,669	15,000
do do, 1885.	5,755	51	1,151	16,091	11,923
do do, 1884.	5,161	143	1,014	13,517	12,675
do do, 1883.	5,161	139	1,014	13,517	12,675
Total in 1887.	42,829	640	3,299	174,714	116,845
Total in 1886.	28,880	4,883	4,282	1,010,000	673,000
Total in 1885.	30,271	6,161	7,791	890,000	573,197
Total in 1884.	28,880	7,003	6,003	714,000	600,000
Total in 1883.	26,091	6,470	5,905	519,216	1,010,217

The above table gives the weekly receipts for the four weeks ending March 9, the total number of all kinds for each week, also the number of each kind for the four weeks, as well as the number of all kinds for the month.

ers. . . Remit drafts or checks on New-York City banks, payable to the order of the Publishers; or in P. O. money orders; or in registered letters, if money must be sent.

Full Descriptions of the Premiums, on a separate sheet, will be sent free to any one desiring it.

Nos. 50 to 60—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-sixth Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 sent by mail, as they must be post-paid. They are put up in clean numbers, with the Index to each volume. . . . They are profusely illustrated, the Engravings used in them having alone cost above Twenty Thousand Dollars! These obtaining premiums for less than eleven volumes, can select the volumes desired, from XVI to XXVI, inclusive. For ordinary use, the sets of numbers unbound will answer quite well. . . . Many hundreds of these volumes are taken every year as premiums. [37] In Nos. 61 to 71 we offer the bound volumes also.

Nos. 71 to 85—GOOD LIBRARIES.

—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any one of the premiums 71 to 85, may select any books desired from the list below, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post-Office, or Express office, as we may find it most convenient to send them.

No. 86—General Book Premium.

—Any one not desiring the specific Book premiums, 71 to 85, on sending any number of names above 25, may select Books from the list below, to the amount of 10 cents for each subscriber sent at \$1; or to the amount of 50 cents for each name sent at the (ten) club price of \$1.50 each; or to the amount of 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

BOOKS FOR FARMERS AND OTHERS.

(For sale at the office of the *Agriculturist*, or they will be forwarded by mail, postpaid, on receipt of price. [38] All these are included in our Premiums, Nos. 71 to 85, above.)

Allen's (L. F.) Rural Architecture	\$1.50
Allen's (R. L.) American Farm Book	1.50
Allen's Diseases of Domestic Animals	1.50
Am. Agricultural Annual, 1877 & 1878, each, pa., 50c; clo., .75	
Am. Horticultural Annual, 1877 & 1878, each, pa., 50c; clo., .75	
Am. New Bird and Poultry	1.50
American Pomology—Apples—By Dr. John A. Warder	3.00
American Rose Cultivator	1.50
American Weeds and Insects	1.50
Architecture, by Cummings & Miller	10.00
Architecture, Modern Am., by Cummings & Miller	10.00
Berry's Fruit Garden	1.50
Bement's Rabbit Fancier	1.50
Bonnie's Method of Making Insurance	1.50
Bouscassant's Rural Economy	1.50
Breck's New Book of Flowers	1.50
Chambers's Flower Garden Director	1.50
Chambers's Family Kitchen Gardener	1.50
Chilton's Grape Grower's Guide	1.50
Chubb's American Fruit Book	1.50
Cole's (S. W.) American Fruit Book	1.50
Cole's Veterinary	1.50
Conard's Country Guide	8.00, cloth, 5.00
Cotton Culture, (Lynn)	1.50
Cotton Planter's Manual, (Chapman)	1.50
Dad's (Geo. H.) Modern Horse Doctor	1.50
Dadd's American Cattle Doctor	1.50
Dana's New Manual	1.50
Dog and Gun (Hooper)	50c, cloth, .60
Dovning's Landscape Gardening (new Edition)	6.00
Drawing for Profit and Health by G. E. Waring, Jr.	1.50
Eastwood on Cranberry	1.50
Ellis's Western Fruit Grower's Guide	1.50
Flax Culture	1.50
Field's (Thomas W.) Pear Culture	1.50
French's Farm Drainage	1.50
Galloway's Grape Culture, (Revised Edition)	1.50
Galloway's Strawberry Cultivator	1.50
Galloway's Small Fruit Cultivator	1.50
Gardening for Teachers and Parents	1.50
Gregory on Sunshades	1.50
Gregory on Mulch Crops	1.50
Harris's Insects Injurious to Agriculture	6.00
Harris's Rural Annual, Bound, 8 Nos., in 2 Vols. Each	1.50
Harris's Hints to the Gardener	1.50
Hop Culture	1.50
Johnson's Agricultural Chemistry	1.50
Johnson's Elements of Bee-keeping (new)	1.50
Leach's How to Build Hot-Houses	1.50
Notes on the Horse's Foot	1.50
Moore on the Grape and Grape Culture	1.50
My Vineyard at Lakeview	1.50
Practical Scientific Agriculture	1.50
Ohio Culture	1.50
Our Farm of Four Acres (bound) 60c	1.50
Parkin on Scavenging	1.50
Pest and its Uses, by Prof. S. W. Johnson	1.50
Pedder's Land Measurer	1.50
Quincy's Mysteries of Bee-keeping (new)	1.50
Randall's Sheep Husbandry	1.50
Randall's Fine Wool Sheep Husbandry	1.50
Rivers's Miniature Fruit Garden	1.50
Richardson on the Dog, paper 80c, cloth, .60	
Sanders's Domestic Text Book (new), paper, 40c, bound 60c	
Schuch's Gardener's Text Book	1.50
Scientific Housewife	1.50
Yates's (John) Hints to the Gardener	1.50
Thompson's Food of Animals	1.50
Toucat Culture	1.50
Went's Hedges and Evergreens	1.50
Yount and Spooner on the Horse	1.50
Yount and Martin on Cattle	1.50
Yount on the Hound	1.50
Yount on Sheep	1.50



containing a great variety of items, including many good Hints and Suggestions, which we throw into smaller type and condensed form, for want of space elsewhere.

How to Remit—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the *Registry fee*, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Pay and after the stamps both, for postage and registry, put in the money and send the letter in the presence of the postmaster, and take his receipt for it. Letters sent in this way to us are at our risk.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be pre-paid at the Post-office where the paper is received.

Read the Excellent Business Notices

which crowd our advertising pages. The publishers have been compelled to add four extra pages, (44 in all) in order to get in their own book notices, that were shoved out from previous numbers. Our readers derive a double advantage: first, in the corresponding increase of reading matter, (we always add a page of reading matter for every additional page of advertisements, beyond eight) and, second, every column of advertisements is a rich source of information. These pages are well worth a careful and thorough perusal; they present an epitome of what is doing in the business departments of Agriculture, Horticulture, etc.—what is for sale, where, by whom, and at what prices. A wide field is thus given for making selections, procuring useful supplies of plants, seeds, implements, etc., etc. We aim to admit none but responsible, reliable advertisers, with whom our readers may rest in confidence. To gratify the advertisers, and to make them feel their responsibility, we ask all our readers when sending orders, or soliciting circulars, catalogues, etc., to state where the advertisements were seen.

Walks and Talks on the Farm.

Those of our readers—which we presume to be the majority—who admire the fresh, practical, and instructive "Walks and Talks" will be glad to learn that we have made an arrangement with the writer which will insure these pleasant papers for a number of years, as well as the excellent aid of Mr. Harris in other departments of the paper. The publishers intend to spare no expense in keeping the *Agriculturist* up to its present standard, or in taking a step beyond, whenever they can see the way.

Darwin's New Work.—The Variation of Animals and Plants under Domestication.

—Mr. Darwin is widely known for his work on the Origin of Species, in which he advances some views that have been the source of much discussion in the scientific world. The present work treats of the variations in our domestic animals and cultivated plants, discussing the circumstances that influence these variations, inheritance of peculiarities, the results of in-breeding, crossing, etc. It is one of the most remarkable books of the present day, presenting an array of facts that show the most extraordinary amount of observation and research. All the domestic animals, from horses and cattle to canary-birds and honey-bees, are discussed, as well as our leading culinary and other plants, making it a work of the greatest interest, not only to the breeder, the intelligent farmer, and the man of science, but to the general reader. Feeling that a work of such importance, and one that will be so frequently discussed and referred to as authority, should be acceptable to the American reader, the Publishers of the *Agriculturist* have in press a reprint, from advance sheets furnished by the author, through Professor Asa Gray of Cambridge, who will furnish a preface to this edition. The work will be published in two neat volumes of over 400 pages each. A noticeable feature of the work is the exact reference

for "chapter and verse" of every statement made, and another in the very copious index, so that it forms a cyclopedia to the subjects upon which it treats. Ready early in April, 2 vols., illustrated, \$6.00.

Allen's Catalogue.—This is more than a mere business catalogue; it is more like a cyclopedia of farm implements, and record of the inventions that have been produced to facilitate agricultural and horticultural operations. Messrs. R. H. Allen & Co., No. 130 and 191 Water-st., N. Y., are not only among the largest dealers, but are manufacturers on an extensive scale.

Prof. John Gamgee in this Country.

—We had the pleasure of greeting this distinguished Veterinarian in the office of the *Agriculturist* a few weeks since, and of welcoming him cordially to America. Prof. Gamgee is known to many of our readers through his works, and through the articles of his which were published far and wide in this country at the time the Kin-dersperst was raging in Great Britain. Years before this pest broke out in England, he had predicted its coming and indicated the course which should be taken, and it was not until his advice was followed that the plague was stayed in England and Scotland. Professor G. was the original mover in the gathering and organization of the first Veterinary Congress, which resulted in the formation of an association that convenes annually, and has already done great good. It may be appropriately styled the father of the modern school of Veterinary Medicine—that school which regards prevention as more important than cure, and studies diseases not so much in the poor stricken beasts, as in the localities which breed the pestilence, where contagions have their origin, and may be most successfully combated. Professor Gamgee is at present at the head of the Albert Veterinary College, London, and visits this country with a view to introduce a method of preserving meat quite fresh and sweet for several months, at ordinary temperatures. He will travel extensively over the United States, and we bespeak for him a hearty welcome from agriculturists and others.

Life Insurance.—The subject of Life Insurance has already been presented in these columns, and its propriety and value as an investment are generally accepted. The N. Y. Mutual Life Insurance Co., which we believe, is the largest in the world, publishes its annual statement without comment, as the best way of presenting its claims to the confidence of the public.

Sundry Humbugs.

—The spring campaign has fairly opened. We have the highly-colored and tempting programmes of fifteen separate and distinct "honor-ent" associations. Only a few of them appear to be worthy of special notice. It is not necessary for us to go over the ground again, and describe how these people operate. In a great variety of forms, they persuade the unwary to invest one dollar in the hope of receiving a hundred dollars. The bait is varied, but it covers the same old hook. At present, some of the most "promising" humbugs are in the book and paper line. The Broadway Publishing Co., 539 Broadway, is just now believed to be in a transition state, and soon to appear as A. D. Bowman, 43 Broad-st. They offer a book, and a prize of not less value than \$3.00, with a good chance of getting \$1,000, all for \$1.00. They can only be found by letter. . . . The Washington Library Co., Philadelphia, come the Soldier Orphan dodge, so common nowadays, and offer pictures, books, etc., with large prizes in money, (greenbacks). . . . S. D. Sine, Cincinnati, proposes to give Pianos, Melodeons, Sewing Machines, Horses and Carriages, Jewelry, Silver Plate, etc., and Money, and all he asks in return is \$3.00. . . . Van Allen and his Eureka Oil are still in the market. We can only say, don't trust this oil, but buy better. . . . M. Westbrook, one I have said, is not to be found at the numbers advertised. . . . W. I. Wheeler & Co. propose to sell \$125 Watches for \$1.00, and to give agents for the trouble of selling tickets and sending in names, Diamond Jewelry by the half fail. . . . Wilcox & Corning are not to be found at 163 Broadway, and we can not see the Sewing Machine they offer for \$1.00. Our advice is to avoid all cheap sewing machines. . . . We have a pound, more or less, of circulars and tickets of Arrandale & Co., 163 Broadway, and judging by what they offer, we should think nothing less than a building one hundred feet square and five stories high, would hold all they offer to the public. We find in reality that a fourth-story back room, small, and dim, seems to contain their Silver ware, Jewelry, Fancy Goods, Dry Goods, Clothing, etc., the choice of which is offered for \$1.00, and we should think the goods were about worth it. For \$10.00 you can get any kind of a watch. . . . The novelties of the season are Wickes & Taylor, counsellors at law. These fellows make very smooth promises, and are apt to mislead the unwary. We are glad to notice some help coming from Pennsylvania. The legislature, by the repeal of the Gettysburg Asylum Charter, seem to have roused the press of that State

to a sense of their duty. We quote from the Franklin Repository, Chambersburg, Pa.: "No You Don't."—A brace of cunning fellows in New York, representing themselves to be 'Attorneys and Counsellors,' profess the desire to forward 'the ends of Justice,' by collecting from the proprietors of Gift Enterprises the prizes justly due to the ticket holder. A remittance \$2.00 is the preliminary step in the proceeding. These artful dodgers ask us to spread their advertisement before our readers, 'at the same time adding any local ideas of your own.' The idea strongly localized in our head is that these fellows are as arant rogues as those they pretend to watch, and we caution our readers against being caught by their transparent swindle. We have visited their office, and, of course, could only find the clerk!!.. We warn all against Rev. Edward A. Wilson, Williamsburgh, N.Y., and his prescription for consumption, free of charge. No such man is known at the number given. We pronounce him an unmitigated scoundrel—second only to Dr. Fancher, 88 West-st., and Dr. M. L. Byrn, Box 4699, New York Post-Office. For these last two men we can hardly find words strong enough to do justice to the subject. One of these chaps professes to issue a monthly paper to disseminate universal intelligence. We have one of these precious sheets, and find it to be of the infant murder and lacerations order. Dr. Byrn makes a very bad book, and vendes medicines to match, and is another nuisance.... Among the papers asking for exchange is one purporting to be devoted to Agriculture, Literature, Poetry, etc., etc. It goes by an attractive name. Its contents are the poorest trash imaginable—love, vengeance and thunder, and the like. But the trouble does not lie in its worthlessness. By turning to the last few pages, we see wonderful inducements offered to agents for spreading its circulation, in the way of Jewelry, Books with high-sounding names, Pianos, Organs, Mooney, (Greenbacks,) etc., etc. Then follows a long list of books to be sold at greatly reduced prices, each book to be accompanied with a prize or "gift" valued from \$1.00 to \$100.00. We pronounce this a blinding of the worst sort, the paper itself being only a hum. We again warn all persons against investing money in any gift publishing establishment of this sort.

The Book of Evergreens.—By Josiah Hoopes. This is a long needed work, as it puts up the present state of our knowledge upon the cone-bearing plants, or Conifere, of the botanist. Mr. Hoopes is one of those persons rarely met with—a practical cultivator, and a man of science at the same time. While his work gives us all the Conifere arranged in the classification of the botanist, at the same time treats of the experience, not only of the author, but of American cultivators generally, with this large and important family of plants. Evergreens play so interesting a part, not only in ornamental planting, but in what may be called economical planting, (i. e. hedges, screens, wind-breaks, etc.), that we are sure a work which treats of their propagation and culture, describes in both popular and scientific language the many species, and, what is of not the least importance, gives a list of the tender and unreliable ones, will be warmly welcomed by every lover of these beautiful trees. Mr. Hoopes brings to his work a perfect enthusiasm for his subject, and is as free to condemn a plant as if he were not a nurseryman. All the latest novelties from Japan, the North-west, etc., are noticed, and their success or failure, both in this country and in England, is recorded. The work is abundantly illustrated with engravings, so carefully executed that the publishers feel it due to that department of their establishment to call especial attention to them. We must commend the conscientious care the author has shown in striving to arrive at the correct names. As a general thing, the nursery catalogues are at fault in this respect; they often contain the same thing under different names, or trees with names that have long ago been shown to be incorrect. We cannot much blame the nurserymen, as the standard works on evergreens have heretofore been foreign and expensive. We hope, now that we have an available work which may be considered as standard, nurserymen will do better. Not the least interesting portion of the book is an account of the principal collections of evergreens in the country. The work is now ready. One large 12mo vol., on heavy tinted paper, in bevelled boards, Price, \$3. By mail at same price.

Cheap Lands at the East.—"G. C." Ct. There is no need of going very far west to find low-priced lands. It is true that farms in a high state of improvement, with good buildings, cannot be bought for much less than fifty dollars an acre, and in many places near large towns, they are often worth four to ten times that sum. But it is still possible to buy farms with many improvements on them, and good facilities for making more, for thirty dollars an acre. In the last monthly report of the Agricultural Department, at Washington, there is an estimate given of the value of unimproved lands, in several of the older States. In New York, the average value of these lands is put at \$32 an acre. In the north

part of Oneida County, there is a tract of spruce land, worth but \$5 an acre. In the Catskills, woodland can be bought for the same price. In Herkimer County, there are a hundred thousand acres for sale, from 50 cents to \$5 per acre. In Suffolk County, a large tract of pine woods, at \$8 an acre. In Washington County, land can be had for \$3 an acre. In Worcester County, Mass., there are unimproved lands, at \$6; in Barnstable County, at \$3; in Hampden County, rocky and swampy lands, at \$5. Salt marshes, easily reclaimed, lie all along the coast, from Chesapeake Bay northward, at low prices. These lands are all near good markets. Some of them can be made available for tillage, and most can be pastured or kept profitably in forest. They all want capital to improve them. However, all low-priced things are not necessarily cheap.

The Bluffton (Mo.) Wine Company. The annual report of this enterprise shows a prosperous condition of its affairs. The company, of which George Hosmann is President, includes some of the most substantial men in Missouri; it owns an extensive tract of land on the Missouri River which is well adapted to grape culture. The land is offered to settlers on favorable terms. Those who wish to go into grape growing at the West should send for a prospectus either to George Hosmann, at Hermann, Mo., or Dr. L. D. Morse at St. Louis.

Eighty, not Eight.—On page 98, March Number, a correspondent speaks of a pine tree planted in 1813, which "now has a diameter of more than three feet and a height of nearly eight feet." It will be seen that a *y* dropped out and made eight out of eighty, a *y*d difference.

A New Paper. The Model Farmer. Semi-monthly, edited by Thomas J. Key, and published by Key & Barr, Corinth, Miss. This neat and unpretending journal deserves a welcome, not only from the fact that it is the only agricultural paper in Mississippi, but because it is a "model" which some of its contemporaries will do well to follow. There is not a growl in it, at things that are past change, nor a flag at other parts of the country. It goes to work in earnest, and has such a cheerful, common-sense way about it that one cannot help wishing it the full measure of success that it deserves.

Whitewash.—"N. P." Good lime and water are the essentials. Some brands of lime have so many impurities that they are unfit for inside work. Slake the lime in a clean vessel with boiling water, making it so thin that a brush will lay it on smoothly. An ounce of salt to a pailful will make the wash adhere better. Some add a very little bluing, as in rinsing clothes. When the whitewash is made, keep it off your fruit trees, and on your walls and fences. A nice cream color may be made for fences by adding to a half bushel of lime three pounds of yellow ochre. Nice whitewashing depends quite as much upon a good brush and good work as upon the wash.

Beets Drying Up Milk.—"P. R." N. J. We have used both sugar beets and mangolds for several seasons, and never noticed any such tendency. The difficulty complained of is probably owing to some lack of other food, or to unfaithfulness in the milker.

Early Rose Potatoes.—On another page we notice the remarkable price at which Mr. Hoffman sold his potatoes. Our advertising columns state that a portion of this lot has been sold at \$39 a bushel, and we have seen a letter to Messrs. Bliss & Son in which the writer proposes to pay \$100 for a bushel of Early Rose.

Bad for Mr. Knox.—Advertisers who come late will be left out, and we doubt not that Mr. Knox will be very much disgusted when he opens the *Agriculturist*, and finds his broadside seed advertisement omitted. Mr. K., besides his most extensive small fruit farm, has a first-class seed and implement store, under the immediate charge of his son. Especial attention is given to scolding seeds, as well as plants, by mail.

Implement Catalogue.—We have from Plant Bros., Platt & Co., of St. Louis, and Kansas City, Mo., a very full and excellent illustrated Catalogue of Farm and Garden tools, seeds, etc. It is accompanied by a calendar, a descriptive catalogue of seeds, and other valuable reading matter. Another evidence of Mo. progress.

Preservation of Meat by the Gamgee Process. The process of preserving meat perfectly fresh and sweet for many months, without the use of salt or ice, has something about it which challenges every doubt. Seeing is said to be believing, and many persons saw hanging in the great show window of the *Agriculturist* office, on Broadway, four carcasses of English mutton preserved in this way, one, two, three, and four months old after slaughtering. One carcass had hung

for six weeks in Professor Gamgee's kitchen before it was boxed to cross the Atlantic. There was not the least taint of corruption upon any part of them. Two were slightly mouldy, owing to the manner in which they were packed, but were otherwise perfect. A select company had the pleasure of dining with Prof. Gamgee upon some of this mutton, and it was pronounced unsurpassed. The process by which this meat was cured is patented in this country, and consists of causing the animal to inhale carbonic oxide gas until it loses consciousness, when it is killed and bled. The carcass is then quickly dressed, and while still warm, exposed a short time in a chamber to an atmosphere of the same gas, mingled with a little sulphurous acid gas. These gases, especially the former, combine with all the oxygen in the system, and take away all that enters the meat through absorption of air. This very important discovery, which is the result of years of study, may be of incalculable advantage to the people of this country and of the old world. If Texas beef can be placed in our markets at 12 or even 10 cents per pound, both the raiser there and the consumer of beef here will be greatly benefited. It seems almost as if the time might soon come when beefs, and sheep, and hogs, will no longer be packed in close cars, transported for days and nights in suffocating heat or piercing cold, driven through our crowded cities, feverish and excited, starved and famishing for drink, to be thus slaughtered; but killed within sight of their own pastures, and their flesh, preserved by this process, transported like any other merchandise, to be sold and used any time within six or eight months. Experiments will soon be made of transporting "Gamgeed" beef and mutton from some of our Western States and from Texas, and our readers shall have reports of the success. These experiments or tests are taken in hand with great zeal by several gentlemen of large means and entire responsibility, so that we may hope for speedy and accurate results. It is but fair to add that this interesting discovery of the action of carbonic oxide on fresh meat was made in pursuing investigations having for an object the furnishing of healthy meat, at a cheap rate, to the population of Great Britain.

A "Small" Lemon.—"Citrus" of St. Augustine, Fla., writes: "Please receive herewith a small specimen of our Sicily Lemons, produced in my garden, at this place, and as only a moderate type of the excellence of many of the semi-tropical fruits of Florida, all of which are grown here of rare excellence of quality, flavor, shape, and size, as compared with the more tropical climate of the West Indies." The "small" lemon measures a foot in its smallest circumference, and attracts much attention from the passers on Broadway.

The American Naturalist.—The March number begins a new volume, and presents us not only an increased amount of reading matter, but the assurance that the magazine will be continued. Mr. George Peabody has placed in trust a fund to found the Peabody Academy of Science, and the *Naturalist* will hereafter be issued as one of the publications of the Academy, at Salem, Mass., on the same terms as heretofore—\$3 a year.

Hens Eating One Another's Feathers.—"G. S. W." Foxboro, Mass., asks what will cure hens of eating the feathers off one another's necks. This trouble usually occurs when hens are getting ready to begin laying or are laying, at a season when insect food is not to be had. We may be mistaken, but have the opinion that a block of beef scraps in the yard would be a cure. We feed our poultry all the fresh bones from the kitchen, pounded fine and never have any trouble of this kind. Beef scrap would probably affect the flavor of the eggs a little in warm or mild weather. Most people will not notice it, and the eggs *sell* just as well.

Sick Chickens.—On page 7 of the current volume, in an article entitled *Bad Luck with Poultry*, a disease was described as causing the filling up of the mouth and throat with a yellow, offensive, tough mucus. Several remedies have been suggested, and it seems that the disease is quite common and fatal. Sprinkling salt and burnt alum into the mouth after wiping it out thoroughly, is recommended. "C. I. H." of Bethlehem, Pa., was successful in curing several cases, and in first removing all the substance thoroughly, then swabbing and rinsing out the mouth with a solution of Sulphate of Iron. An acquaintance recommends very stimulating diet of scalded meal or soaked bread with red pepper, and ale; tincture of iroo in the water, and a daily washing of the mouth in vinegar and water, or vinegar, if not too strong.

Strawberries in New Jersey.—The following account of strawberries in southern New Jersey is from the Report of the West Jersey Fruit Growers' Association. It is the experience of market growers in Cinnaminson, Moorestown, and that part of Burlington County where the soil is generally very light:

"Our general system of cultivation is in beds from 4 to 5 feet wide, made from single plants set in rows about 2 feet apart, generally in the spring. Yet some very good results have been obtained when the row system of cultivation has been adopted, mostly with Wilson's Albany, which seems to be gaining confidence in the other townships besides Burlington and Beverly, where it has been more generally cultivated for years. In addition to the Wilson's Albany Seedling, Downer's Prolific, French's Seedling, Cutter's Seedling, and Ida, are the general favorites for cultivating for market purposes. The latter variety, though introduced recently, has been largely planted of, and as far as vigor, healthfulness, and productiveness is concerned, it seems to meet the wishes of the people; yet the size being from medium to small, will, we fear, prove a drawback. The Juniata, after another year's trial, corroborates what was said one year ago, that it 'is a poor grower on any but very strong soils.' The foliage burns badly in the summer, and as far as has been tested in this vicinity is not worthy of cultivation. Metcalf's Early, introduced from Niles, Michigan, represented to be several days earlier than the Wilson, producing a large crop in a very short time, has upon trial proven no earlier, and the berries are so soft as to render them unsaleable in the market; hence we would deem it unfit for general cultivation. Among the new varieties on trial, are the 'Singer,' a very vigorous grower, hardy, berries said to be large, bright colored, and firm, introduced by Charles Harner, of Philadelphia. The 'Durand Seedling,' introduced by F. Brill, of Newark, N. J., is a vigorous grower, of good flavor, promises to be a valuable variety for market. Barnes' Mammoth, strong grower, berries large and handsome. One plant was on exhibition at the Strawberry Show, at Moorestown, the past season, which was of monstrous size, and full of fruit. The Philadelphia, which fruited in this vicinity last season, was several days earlier than any other variety, good flavored, vigorous grower, good size and color."

The Ives Grape.—"Worthington," of Ohio, thinks that we praise the Ives too little and the Iowa too highly. We never expect to suit all the grape growers. When we discuss quality we must put the Ives very low. If it is a question of adaptability to, and profit in, particular localities, then it takes a high rank. We say, grow the best grapes that a locality will produce, and if the Ives is the best, as it seems to be in certain parts of Ohio, grow that. The Ives does nicely with Mr. Knox, but is inferior with Mr. Husmann. In the present state of grape culture we are obliged to be cautious how we recommend any variety as the grape for every locality.

Turkey Rhubarb.—"J. O. D." No seed to be had, and it would probably be very inferior in quality even if the experiment could be made here.

Seeding Down in the Spring on Oat Stubble.—"Inquirer," of Canada. Rather than sow grass seed, as you propose, on the stubble, we think it better to wait and give the piece a very thorough harrowing, going over the ground until it is as mellow as a garden; then sow the seed and bush it in. The grass will do better than if sown with any spring grain.

Potato Diggers.—We most respectfully decline to take the responsibility of advising in regard to potato diggers—which to buy. There are serious, we may almost say radical, objections to all we have ever seen in the field. There are some, however, which, as the pomologists say, "promise well." When we are assured of the success of any by personal inspection of its operation, and know that there is a prospect of the market being supplied, our readers may expect us to speak out.

Catalogues Acknowledged.—*Seeds.*—Robert Baist, Jr., Philadelphia; John Vanderbill & Brothers, New York; J. M. Thorburn & Co., New York; Jas. Vick, Illustrated Catalogue and Floral Guide, Rochester, N. Y.; Henderson & Fleming, Illustrated, New York; Jas. J. H. Gregory, Marblehead, Mass.; Alfred Bridge-man, New York; E. Newbury, Brookline, Conn.; M. O'Keefe, Son & Co., Rochester, N. Y.; Hazen & Schmidt, Erfurt, Prussia; F. A. Haaga, Jr., Erfurt, Prussia; John Stewart & Sons, Dundee, Scotland; Harry A. Drees, Illustrated, Philadelphia; B. K. Biles & Son, Illustrated, New York; Theodore C. Wendel, (Tree Seeds), Boston. Hovey & Co., Boston, Illustrated; J. R. Duxart, N. Y.; J. W. Elliott & Sons, Philadelphia; L. D. Scott & Co., Huron, Ohio; Vilmoren & Co., Paris, France. *Small Fruits and Vines.*—S. D. Rodman, Newfane, N. Y.; H. B. Lums, Sandusky, Ohio; D. J. B. Haines, Oaies, N. Y.; Myron De Wolf, Delavan, Wis.; J. Knox, Pitts-burgh, Pa.; D. H. Brown, New Brunswick, N. J.; Ferris & Caywood, Poughkeepsie, N. Y.; Parley & Hance, South Bend, Ind.; Thos. C. Andrew, Moonstown, N. J.; Francis Bell, Newark, N. J.; C. W. Grant, Iona, near Packerhill, N. Y.; R. W. Holton, Haverstraw, N. Y.; John W. Bailey

& Co., Plattsburgh, N. Y.; David Long & Son, Williams-ville, N. Y.; Elijah Myrick, Croton Junction, Mass. *Nurseries.*—Joseph Cochran, Havana, Ill.; B. M. Watson, Plymouth, Mass.; Ellwanger & Barry, Rochester, N. Y.; Hoopes, Bro. & Thomsen, Westchester, Pa.; Wm. S. Little, Rochester, N. Y.; C. Raoux, N. Y. Importer; J. W. Manning, Reading, Mass.; John W. Adams, Spring-field, Mass.; Mahlon Moon, Morrisville, Pa. *Potatoes.*—Reisig & Hexamer, Newcastle, Westchester Co., N. Y. *Green-House and Florists.*—George Such, South Amboy, N. J.; Peter Henderson, South Bergen, N. J.; John Saul, Washington, D. C.; Bennett & Davidson, Flatbush, N. Y.

Silt-milking Cows.—Several Inquirers. —Sifting the tongue for an inch or two, even cutting a slender V-piece out, may do sometimes; it will not work in all cases. Muzzles set with nails often fail, though we think they ought not to, if the nails are made sharp enough and the muzzle is attached by three or four straps to the halter, so that it will hang as low as possible on the nose. The neck yoke, described on page 235 of the *Agriculturist* for November, 1865, is effectual. This arrangement is very simple; eight round hard-wood sticks, $\frac{3}{4}$ of an inch in diameter, are arranged to form two square frames surrounding the cow's neck, and held about 10 or 12 inches apart, by driving them into holes bored at right angles to each other near the ends of four $1\frac{1}{2}$ inch square sticks, also of hard wood. This entirely prevents the cow bringing her head around to her side.

Artificial Mother for Chickens.—When chickens are artificially hatched, either by turkeys or by the heat of warm water, artificial mothers are needed to brood the chickens. "G. F. G.," of Kalamazoo, Mich., describes one which he uses, as follows: "A thick wooden blanket is hung by the corners in some sheltered, dry place, so that about 3 feet square will rest upon the ground or floor. A mother hen is suspended in a box above the centre of the blanket, and the chicks feed under the outside. The clucking of the hen will call them towards her when they need brooding, and as in seeking the hen they cluster in piles under the centre of the blanket, the natural warmth imparted is sufficient for all purposes. When the flock is large, if the outside ones become cold, they work their way to the centre, and it is only necessary to use the hen for a few days."

Preserving Eggs.—Take a bread-pan or other pan, put slaked lime into it, till it has enough to allow the eggs to stand upright, small end downwards. As soon as the layer is completed, fill up till they are covered and there is an even surface. When you have enough eggs to make another layer, put in slaked lime sufficient to be filled up by the eggs you have ready. You may continue till the pan is full. If the eggs are put in fresh, you may keep on, and they will be fit for breakfast at any time, and be like new-laid eggs. But if they are stale when put in, this process will not restore them.

Lice on Cattle and Sheep.—The spring is the season when most annoyance is caused by these parasites. We have so many letters asking for and recommending cures, that we are induced again to allude to that wonderfully effective destroyer of such vermin, *Carbolic Acid*. This is used in the form of soaps, which may be easily applied in water, making a moderately strong suds. Cresylic acid is a cognate substance, almost always associated with carbolic acid, and under the trade name of "Cresylic Soap," an excellent article is advertised and furnished. We have employed this soap to rid our shelves of ants, our cupboards of cockroaches, poultry of lice, dogs and cats of fleas, and not having occasion to use it upon our horses or neat stock, have supplied acquaintances whose stables were infected. We have even prescribed a bath of Cresylic Soap and water for a newly arrived immigrant, and in every case of its application have had the satisfaction of learning of its efficacy. Farewell to mercurial ointment, that efficient, but very dangerous article in careless hands! So long as we can obtain carbolic compounds, we banish it.

Walnut Worms.—"Subscriber," Pome-roy, Ohio. We cannot tell how to preserve your Walnut trees, unless we know what worm infests them. Next season, put some in a box with leaves, and mail to us.

Darwin's Variation of Animals and Plants Under Domestication.—Since our announcement of the reprint of this work was in type, the London *Gardeners' Chronicle* has come to hand with an extended notice, from which we extract the following: "Mr. Darwin's work on domesticated animals and plants, whose appearance we announced a fortnight ago, is one of such importance to both the practical and theoretical gardener, as well as to all persons with whom the garden is most closely associated, professionally and soci-

ly, that it must claim a large share of our attention, no less on this account than for its special merits, and the stores of information it contains. Written in admirable English, using no scientific terms but such as are comprehensible to men of fair education, lucidly arranged, and indexed with scrupulous care, there is not a gardener in the country who has any taste for the history or theory of his art but will peruse it with pleasure and profit, and find it difficult to say whether he values it more as a store-house of facts or as an incitement to observe and to think. Is his employer a sportsman? he will find in Mr. Darwin's pages such information regarding dogs and horses, their breeds and individualities, as never entered the brain of the gamekeeper, eqnery, or master of the hounds. Is he a farmer? here are anecdotes and observations regarding cattle, pigs, sheep and goats, which no professional breeder can match for number or truth, and which too few of these will believe or care about, not because they are not true, but because most so-called practical men take no interest in animals beyond what immediately concerns themselves. Is my lady a fowl fancier, or has she an aviary? her gardener will here find a wealth of information on domesticated birds of all sizes, voices, and uses, from the canary bird and peacock to the turkey and goose. Lastly, do his master's children seek his advice about their rabbits, pigeons, honey bees, goldfish, or silkworms? If they do, here are curiosities of natural history about each and all, treated with masterly skill and originality. With regard to these zoological subjects, we must confine ourselves to recommending the study of them in Mr. Darwin's pages to those who have time to do so, and proceed briefly to expound the purpose and method of this remarkable book in so far as it is devoted to the vegetable kingdom."

A Novel and Useful Enterprise.

For many years we cherished the idea of securing in a central city location, a large floor, where, in connection with our office, we could have room for a sort of Agricultural and Horticultural Museum or show-room. The great increase in our publishing business has rendered it impossible to give the needed time and attention required to organize and carry out such an enterprise. Recently Mr. L. L. Whitlock, (the son of our old friend and instructor, Prof. Whitlock, now deceased) has hit upon a similar idea, without any hint or word of suggestion from us. He has leased the first, second, and third floors over the main *Agriculturist* Office, 215 Broadway, each floor 114½ by 25 feet, with extension upon Murray street of 25 by 12½ feet. Here he proposes to receive on permanent exhibition samples of implements of all kinds pertaining to soil culture, where they can be examined in connection and at leisure by citizens and visitors—a kind of perpetual Fair, and also provide room for meetings or gatherings of cultivators, horticulturists, fruit growers, for conventions, discussions, &c. The enterprise seems to be a very desirable one for all classes, and with Mr. Whitlock's enterprise, fertility of plans, industry, and good intention, we can hardly doubt that the scheme will prove highly successful. The locality is one of the best in the lower or business part of the city—nearly opposite the City Hall, and fronting upon Broadway and the open Park. For particulars see Mr. Whitlock's advertisement.

Heating Manures in the Hill for Potatoes.

Potatoes.—The use of hen-manure composts, night soil, or even barn-yard manure, in the hill or drill with potatoes, is rarely or never advisable. It is much better to distribute it evenly through the soil. The best practice is to use no fermenting manure except such as might have been incorporated with the soil the autumn previous. Wood-ashes and plaster, either or both produce almost invariably good effects. Castor pomace and Fish-guano, both very manures, may, perhaps, be regarded as exceptions to the rule. "No fermenting manures in the hill for potatoes"—for they frequently produce good crops.

Interesting Figures from Our Mail Rooms.

The Chief Clerk furnishes the following figures from his book, showing the actual work expended in mailing a single number of the *American Agriculturist*: Folding and Stitching, Girls' Work, 200 Days. Writing Wrappers, Men's Work, 96 Days. Enclosing in wrappers, tying, and packing in Mail-bags, Men's Work, 63 days, Boys' Work, 35 days—in all 91 days. Total days work, 577, equivalent to 58 persons during 10 days. About 500 Mail-bags, holding 4 bushels each, or 2,000 bushels, are required. Weight of the papers when ready for the Post-Office, 18 tons! These are scattered to every part of the Continent, an average of nearly half a dozen to every Post-Office in the United States and Territories, and the British Provinces, besides large numbers to every part of the world wherever the English or German language is read. Large bundles go to South America, the West Indies, Australia, the Sandwich Islands, various parts of Asia, and even to Africa.

The Department of Agriculture.

—We have before us three documents which show that Col. Capron is earnestly attending to agricultural interests. One is a report on the manufacture of Beet Sugar, showing its importance in other countries, and the necessity of an investigation that will facilitate its introduction here. Another report is in favor of a remission of duties on animals imported for the purpose of improving the stock, and a third for the removal of restrictions upon the importation of new plants, seeds, etc.

Standard of Excellence in Poultry.

—We have received from Mr. A. M. Hulst, Secretary of the American Poultry Society, a pamphlet containing minute descriptions of all the breeds of poultry recognized by that Society. It is the same as the standard adopted by the London Poultry Club, and published in Tegetmeier's Poultry Book, with "Alterations and Additions adapting it to America." Accurate knowledge of poultry is a rare qualification of judges of poultry at our fairs, and this publication, or something like it, should be placed in the hands of every one, as a guide in deciding upon the merits of fowls exhibited at our fairs.

The Buckeye Mower and Reaper.

—We offer as a premium one of the best, if not the very best, machine in the country, regarded either as a mower simply, or as a combined machine. Every year our judgment in selecting the "Buckeye" is confirmed by the prizes which are awarded to it at fairs and trials in all parts of the country. It was not sent to the Paris exhibition last year, because the proprietors have not taken out European patents, but it is a satisfaction both to them and to us that the machines which received the grand awards use those peculiarities which distinguish the Buckeye here. This is one of the most important premiums we offer, and a few weeks of energetic work for the *Agriculturist* may put several young farmers in possession of one of these excellent implements, with all desirable improvements, before laying and harvest time.

Draining Tile.—"R. E. W.," of Wyoming, Penn., says he has been reading Draining for Profit, and, of course, has the fever. Col. Waring recommends only round tiles. These are not to be had nearer than Albany. What is to be done? Do the next best thing—use sole tiles, and if you cannot do better, use horse-shoe tiles. If these cannot be had, two four-inch boards nailed together like a roof or a V inverted, will last a great many years. The use of boards was recommended by our correspondent "H.," of Morris-town. The views of our Morris-town correspondent are usually right.

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Market Price for Corn Husks.—

"G. T. E." This differs much in various parts of the country. The husks are used extensively in upholstery. A good clean article ought to bring ten dollars and upwards at the mill. The husks are run through a hackle, and then pressed in bales about the same size as hay bales, and in this condition are sent to the New York and other markets, where they bring about fifty dollars a ton. The commission merchant sells for seventy dollars a ton. It will be seen from this that the manufacturer and the merchant have the largest share of the profits. The remedy is a neighborhood hackle mill, owned by farmers.

A Peat Swamp Burnt Out.—

"I. O. D.," of Lansing, Cook Co., Ill., writes: "I have about eighty acres of peat land that took fire in August last, and has continued to burn to this date, with no prospect of stopping until the marsh is all consumed, unless copious rains quench it. There was about two feet of peat, and there is now, (March 4th), where it is burned, fifteen inches of ashes lying as light as newly fallen snow. What shall I do with it? The subsoil is sand, and the fire has in most places burned all but the sand. As the land is not fenced, and as I am not flush of funds, do not like to risk seed, labor, and fence, unless there is a good prospect of getting a crop." *Ans.*—One thing you can surely do that is, let it alone. This we advise, unless you can assure yourself, before time to set out cabbages, or plant turnips, or possibly plant corn or potatoes, that the soil will pay. Let it lie, and try a few experiments with it. We presume it will prove very valuable land.

If the New York Independent

shall hereafter advertise itself as a "Religious Journal," or lay any claim to that character, after placing before its readers such an advertisement as filled out the whole of its 5th page in glaring type, on Feb. 20th, we think the American Bible Society should promptly send to the office of the paper a large type edition of the Scriptures, to the end that its editors or publishers may be able to learn the first principles of true religion, Christian principle, and common decency. We have no quarrel with

the Independent, on general grounds, but in behalf of outraged public morals we should feel obliged to advise every family in the land to shun the paper, and to provide a long pair of tongs with which to seize and thrust into the fire every copy that may chance to find its way to their dwellings, unless there is at once a guarantee that its advertising pages shall not hereafter counteract and render ridiculous the religious teachings of its reading columns. We are glad to see the Christian Intelligencer's earnest protest, and to know that its own advertisements are usually so guarded that it is not compelled to hesitate to throw the first stone at the Independent—as, alas! too many professedly religious papers are obliged to do.

Disillation, Brewing, and Malt-

ing.—A small volume with this title, issued at San Francisco, we have read through, expecting to find some useful information for a novice, but are disappointed. It contains general statements, but lacks the minute and illustrations required to make it generally useful. The book is not particularly recommended by such statements as the following: "During the continued and despicably puerile maladministration of the British revenue officials, while they, by crookedness, pertinacious, and persistent official oppression, fast blighted the growth of revenue, while they paralyzed and ruined the licensed distiller, precisely as the United States' rule is now doing," etc. Here, as elsewhere in the book, the adjectives are piled on with a vengeance, for a pretended scientific treatise.

Grass Seed for Reclaimed Salt

Marsh.—W. S. Hayes, Del., wishes to know the quickest way to get salt marsh into the fresh grasses after the tide gates have been put in. It is not necessary to plow, as many suppose. The surface of the marsh is a soft and spongy bed, where the seeds readily sink and germinate. Any grass seed that is desired will grow. We have used White and Red Clover, Red-top, and Timothy, and they have all done well. We prefer a mixture of grasses, to make the largest yield and the best quality of hay. Sow the seed from 15th of March to 15th of April, or in August. It is better to have the sea water shut off six months before the seed is sown. This whole subject has been frequently discussed in back numbers, which can be forwarded by mail on application to interested parties.

Bringing Water into Houses and

Barns.—F. S. Hill, N. J. Where the fountain is higher than the house, the water may be carried in wood, metal, earthen, or cement pipes. If the stream has sufficient fall, the water may be brought in by a ram from a point lower than the house. For this purpose an iron or lead pipe is more desirable than wood or cement, and the difference in cost is not worth estimating. Cement pipes do very well for carrying water from higher points to lower, and are rapidly gaining in popular favor. We should not like to trust them to bear the constant shocks of a ram. Parties who have water runs for sale generally keep pipes to go with them, and can furnish reliable information as to comparative cost and durability. With a reservoir in the house large enough for a day's supply, a small pipe will answer.

How to Get Big Crops.—

As a rule, farmers are much more anxious to get big prices than big crops. There are few farms whose average production could not be doubled in a very short time by more capital and labor. It is safer to use capital in farming than in almost any other business. The credit of the plow is quite as good as that of the loom or the anvil, and the capital will come if it is called for. Use more manure, and get thirty bushels of wheat where you now get fifteen, and eighty bushels of corn where you now get forty. The quantity of grain grown per acre is mainly a question of manure and tillage. A big compost heap makes a full grain bin. With high manuring, the soil needs deeper stirring and a gradual bringing up of the subsoil to the surface. With the present horseharrow and cultivators, nearly all the cultivation can be done by horse power, at a great saving of expense, and a great increase of the crops. Plan for big crops this season.

High Farming without Stock.—

"J. M. B." of Maryland is fully satisfied of the advantage of clean and thorough culture for corn, and of high farming, but would like to see a series of articles discussing restoring and keeping up land by commercial manures without feeding stock. They have not barns and other conveniences necessary to feed cattle in winter, and as every negro is privileged to keep two or three worthless curs, sheep feeding is attended with much care and anxiety. A farmer is apt to start every time he hears a dog bark. We will not give advice on the subject, but have little doubt that Peruvian and Swan Island guano of good quality might be used with profit on barley, to be follow-

ed by wheat, seeded down with clover. But, of course, if the straw and corn fodder, and especially the clover, were sold off the farm, the system would soon impoverish the land. And it seems to us that with easy access to the best markets in the world, some plan of feeding stock might be discovered that would be profitable. In the meantime one thing is certain; as long as large crops of clover can be grown, we may be sure, by plowing it under, of raising good crops of corn, barley, and wheat.

Information about Fertilizers.—

Mr. B. asks: "Cannot the editors of the *American Agriculturist* give us correct information in regard to the merits of different commercial fertilizers without fear or favor? The manufacturers might be angry, but the farmers would be benefited." We would gladly do so, but the subject is surrounded with difficulties. The best plan is to buy only from responsible parties, and insist on a guarantee in regard to the composition of the manure. Keep a sample in a tightly corked bottle, and if there is after-wards reason to suspect that the manure was very poor, have it analyzed, and if it is inferior see for damages.

Condensed Milk Factories.—

"F. L.," Vt. The use of condensed milk is greatly on the increase, both in this country and in Europe. The "condensing process" is patented, and several different companies are engaged in the business, using different patents. The condensing is done in the country, in districts where milk is cheap. There is the same advantage to farmers in one of these factories, as in a cheese or butter factory. It makes a home wholesale market for milk, and saves much labor in the house.

Maple Sugar.—

According to the last United States census, about forty million pounds are made in the whole country, and one and a half million gallons of syrup. The New England States, New York, Michigan, and Ohio, make the most. Nearly one-half of the whole quantity is made in New York and Vermont. The value of this product at the present market prices is not far from eight millions of dollars. There is no good reason why more system should not be introduced into this industry and the business be greatly extended. Why should not better varieties of the sugar maple be sought out and multiplied by nurserymen, and orchards be planted on a large scale? There is no danger of a glut in the sugar market, and if the product were multiplied ten fold the price would still be remunerative. The tree will flourish in elevated positions and on rocky land quite too rough for tillage, and its cultivation requires very little care.

Landreth's Garden Seeds.—

Messrs. Landreth & Son send us a series of specimens of the produce of their seed farm. The reputation of these gentlemen is such that we shall now these seeds in full confidence of obtaining excellent results.

Early Cultivation of Potatoes.—

Much labor may be saved by running a bush harrow over the ground just as the shoots are breaking through. This will disturb the whole surface of the ground, and is equivalent to a good hoeing. A week or ten days later go between the rows with a cultivator, and if the young shoots are covered deeply with dirt it will not harm them. The early sorts will only need cultivating once or twice more, and this can be done by horse-power. Early and frequent cultivation makes cheap potatoes.

Triplets.—

"J. B.," writes: "J. H. Dickman, near Richmond, Indiana, has a cow with triplet calves, which are fine, healthy animals, and at last accounts the dam and trio were 'doing well.'"

The Sabbath School Index, by R. G.

PARDNER, published by J. C. Garrigues, (\$1.25), is a useful book for all Sabbath school workers, and may well be selected by all who feel, or should feel, the importance of this field of labor, and desire to secure all the aids possible. It "points out the history and progress of Sunday schools, with approved modes of instruction, examples in illustrative, pictorial, and object teaching; also the use of the black-board, management of infant classes, teachers' meetings, conventions, institutes, etc., etc."

Sugar Consumption.—

"G. B.," La. There is no danger of an over-production of sugar for many years. The United States and Great Britain consume about 1,420,000 tons annually, or forty-one pounds to each inhabitant. In Southern Europe, the consumption is about twelve pounds per head, and in Germany, about seven pounds. If the consumption were to be brought up to the standard in this country, it would take at least three times the present crop to supply the demand.

What to Grow and How to Grow it.—C. T. K., Montgomery Co., Pa., is a teacher with some leisure time, can have one-quarter to one-half an acre of land, and asks, "What to plant, how to cultivate it, etc., so as to render it most agreeable, interesting, healthful, and profitable." This is one of many cases in which we are asked for advice which cannot be given without an acquaintance with the person's skill, experience, and immediate surroundings. To one who has a love for plants, it will be "agreeable and interesting," and we may add "healthful," to grow anything from cabbages to roses. If by "profitable" is meant the amount of money to be realized from the place, the things to cultivate will depend upon one's knowledge and the demand of the neighborhood. Raspberries and strawberries would pay, and if in a populous region, raising seedling plants of cabbages, tomatoes, peppers, etc., with hot-beds or cold frames, strawberry plants, etc. The "how to cultivate" we are telling all the time, and there are books containing full instructions on these points.

A Mineral "Curiosity."—L. H. D., Barlington, Cal. Terr. The specimen sent is hardly a curiosity to those familiar with minerals. It is a form of Asbestos, of which there are several varieties, some quite as silky in texture as yours, but pure white. It has been woven into cloth, which is incombustible and may be cleansed by burning. It is said that the ancients used a cloth of Asbestos to wrap the bodies of the dead when about to be buried, to prevent their ashes being mixed with those of the funeral pile.

Alton, Ill., Horticultural Society.—This Society is very much alive, and sends out its proceedings at once, on a well-printed sheet. There is some excuse for this, for there is always something to print and useful to read. The proceedings for the 7th of February contain an excellent essay on the carenello, by that well-known orchardist, Dr. E. S. Hall.

New York State Grape Growers' Association.—The Grape Growers of N. Y. to the number of seventy, met at Canandaigua on the 27th of February last and formed an association with the above name. The Hon. Emory B. Pottle of Naples is President, and Dr. E. K. Van Keuren of Hammondspont, Corresponding Secretary. An exhibition of grapes will be held in Canandaigua next autumn, at which competition is invited from all parts of the United States and Canada.

Forcing Strawberries.—"Subscriber." Preparation must be made the autumn beforehand and the plants well established in pots before winter. The full details of the process, with description of the necessary structures, is given in Fuller's Small Fruit Culturist.

Alanthus.—The Country Gentleman says: "We know nothing of the value of the Alanthus as a timber-tree, but should suppose it not to be of much value. It grows rapidly and suckers freely, and will succeed on soils too poor for other purposes. The plantlets bear a profusion of seeds, but as there is very little call for it there is probably none in the market." It is not often that friend Thomas gets so far off the track, and we put him right and answer a correspondent at the same time. The Alanthus is valuable for timber; the wood is hard and does not decay readily; is excellent for vineyard stakes; and is good fuel. It does not sucker badly unless the roots are injured. Seed is to be had at Thorburn's, and probably of other dealers.

Knuts on Cherry Trees.—"J. A., Hunterdon Co., N. J. The knuts on your sour red cherry trees are the same, or practically the same, as the black-knot on the plum. The free use of the knife on their first appearance is the only successful remedy.

Propagating the Maple.—O. Moffat, Iowa. The Maples are easily raised from seed. Both of the Soft Maples ripen their seed in May or early in June, and it should be sown at once. That of the "hard," or Sugar Maple, ripens in autumn; it may be sown then or kept in a cool place until spring. As to care, young trees need hoeing, weeding, and thinning, like any other plants, and it will be useless to plant Maple or any other seeds unless this care can be given the young plants.

A Little Girl's Letter.—Miss E. A. O. writes from Albany, Ill., and though she asks us to correct her letter, we shall not do it, but give it as a specimen of the many words of appreciation that we get from the little folks. "I write to tell you how well we like your paper, the *Agriculturist*. We have taken your paper for several years. My Ma says she has been a better house-keeper ever since she commenced reading it (but I guess she must have been a very good one before). We have such a nice place, one half mile from the Mississip-

pi river and Albany railroad station, and such fruit as we have! We do have some of the nicest Raspberries, Strawberries, Currants, Gooseberries, Cherries, Grapes and Apples. Ma says we learned how to raise them by reading the *Agriculturist*. Ma tells us so. Pa got up the club last year for the *Agriculturist* and received the garden seeds. Ma says we had the best garden we ever had before. Oh, I must tell you about the Chickens too, we raised a great many last year, I can't tell how many. We have fresh eggs all winter. Ladies often say to my Ma when they come here, how do you get fresh eggs all winter, and she tells them by reading the *Agriculturist*."

The Tomato Question.—The discussion of the relative values of the different kinds of tomato, as shown by last year's experience, is no longer timely, and the many friends who have written us upon the subject will excuse us if their communications are not published. The seeds for a new crop are sown by this time, and we shall be glad to hear what another season's trial has developed. Those who ask us to expose certain varieties as "humbags" should recollect that a single season's trial in one locality will not warrant their condemnation.

A Large Price for Potatoes.—Mr. D. S. Haddon of Utica, N. Y., sold in February last to a party in New Jersey, one hundred and fifty bushels of Early Rose Potatoes for Ten Thousand Dollars! Over sixty-six dollars a bushel is a good price for potatoes, and the sale is worthy of note, as it shows that a really good variety will pay the originator for his trouble in producing it. The fact that really meritorious fruits, flowers, or vegetables, meet with a ready appreciation, should encourage judicious experiments in producing them.

Hedges.—"H. N.," Huntingdon Co., Pa. The method of lopping the Osage Orange to form a hedge described in October last, is approved by the large planters at the West, as cheap, quick and efficient. We have an article on the subject from a practical hedge grower which we hope to give soon. The Honey Locust makes an excellent hedge, and will stand the winter in portions of the country where the Osage Orange will not.

Mixing of Vegetables.—"O. M.," Ottumwa, Iowa. Potatoes do not "mix" in the hill. Peas and Beans rarely mix when grown near each other, but sometimes do through the agency of insects; the same with tomatoes. The different varieties of Onions, Parsnips, and Beets, will be likely to cross.

Black Knot.—"Subscriber." The "cause" of the Black Knot is a fungus; the remedy is to cut and burn the limbs as soon as it makes its appearance. F. Manten, Me., states that his plum trees on richly manured soil are affected by the knot and that those on similar soil, but unmanured, are exempt. He asks if this is the experience of others.

Silver-leaved Maple.—A. G. Wood. The tree of this name is a native of this country (*Acer dasycarpum*) and is also called White Maple. The soft Maple of the East is *Acer rubrum*. The most common maple used in cities is the Norway Maple, *Acer platanoides*.

Tying Material.—D. W. Tainter, Mo., asks what material is used at the East for tying vines. For arns, osiers are generally used, and for tying in the new growth, a good cotton twine—not the cheap stuff that is half straw—is often used. Mr. Knox uses ry straw, which is made flexible by dampening; this is put on with a twist, rather than a knot, in a way that is not easy to describe and would be difficult to figure. The material used at the East for tying osiers is bast bark, the inner bark of the Linden. Cuba bast is from a different tree. Either would answer. It is sold by seedsmen.

The Hair Worm.—The hair-like worm, *Gordius aquatilis*, has long been supposed to originate from a horse-hair. It was bad enough to have its parentage misrepresented, but it has met with a worse fate at the hands of a quack pill man, who figures the innocent worm, and says: "It is given here that its bite may be guarded against, as it produces the felon or whitlow, when the blood is at all impure." Then, as a matter of course, follows the advice to take the fellow's pills to keep the blood pure. When a hair worm does bite no doubt terrible consequences follow, only it don't and they don't.

Moving Evergreens.—G. H. Lonsberry, Hamilton Co., Ohio, says: "I have some evergreens, about 10 years old, and about 20 feet high. They are too near my house, so I wish to move them. What is the best plan? I am advised to dig a trench around each, pour in water, and let the earth freeze to the roots, and

then move them. I am afraid of the advice." We should not try the frozen ball plan, but wait until the buds begin to swell, and then remove them with as little mutilation of the roots as possible, on a damp day. If the work cannot be done in moist weather, be sure and keep the roots thoroughly damp, or even dripping wet.

Queer Apples.—D. B. Carpenter sends us from the ranch of J. Q. A. Ballou, San Jose, Cal., a singular cluster of apples—one apple as large as a fidget, with three smaller ones arranged around it, and all placed directly on the bark near the middle of the body of the tree. We at first thought they might be a kind of fungus, but a careful examination showed them to be apples.

Curenlio.—Henry Steil, Leavenworth, Kan. The curenlio does not confine itself to the plum, but other fruits, apples even, are attacked by it.

Canker Worm.—David Lyman writes: "Tie a strip of cotton batting, a few inches wide, around the tree with one string, and turn the top and bottom out so they will be flaring. The insect gets entangled and must deposit her eggs in the cotton. In the spring, rather and burn. One of our most reliable men, Benj. W. Coe, of this place, tried it last year with perfect success."

Earthworms in Flower Pots.—"H." says: "If your correspondents who are troubled with this 'epidemic,' will apply a weak solution of salt in water a few times, they will destroy the worms, and benefit the plants." We fear that most persons would use too strong a solution, and we think lime-water preferable, as that cannot be made too strong. Perfectly clear lime-water, and not milk of lime, is to be used.

How to Study Botany.—W. K. Tipton and several others. Get Gray's Lessons in Botany and first thoroughly learn the structure of plants, and then with the same author's Manual you will soon be able, with a little practice, to identify any of our wild plants.

Trees for Southern Wisconsin.—"J. E. M.," Spring Green, Wis. For trees around the house, Norway Spruce, White and Austrian Pine for evergreens, Sugar and White Maple and Elm for deciduous trees. These are all perfectly hardy and easily obtained.

Lima Beans.—William Smith. These need a rich, warm soil; set poles four feet apart each way, when the ground is well warmed and cold rains over, put four to six beans to each pole, pressing them into the soil, with the eye down, about an inch deep. They may be had earlier by starting under glass on sods. See "Kitchen Garden" for last month on page 83.

The Blue Jay Indicted.—W. Reid of Wis. "I have seen them sucking hens' eggs and birds' eggs, and destroying young birds in the nest. They are great fruit thieves, and they swarm in scores around our corn cribs, both summer and winter. I do not know a redeeming trait in the Blue Jay's character."

Cranberry Queries.—"H. C. S." It is not possible for any one to tell you how much it will cost to prepare land for cranberries without knowing its present condition, as some costs three times as much as other. The meadow should be in fair bearing in three years, though some fruit is borne earlier. Three hundred bushels to the acre is considered as an average crop.

Retarding Peach Trees.—A correspondent writes us that last winter, after the ground was fairly frozen, he placed litter around his trees to prevent the early thawing of the soil around their roots, and thus retarded their starting until danger of late frost was over. One experiment seemed so favorable that he proposed to repeat it this winter. Please give us the results.

Box Edging.—R. Antekle, Delafield, Wis., says he has no difficulty in raising box from cuttings. He makes a trench about six inches deep, uses cuttings 6 or 8 inches long, and sets them deeply and so close together that the foliage forms a continuous line. The earth is packed firmly on both sides of the row, and the plants watered during the first two or three weeks.

West Jersey Fruit Growers' Association.—Fifth Annual Report for 1897-1898. The West Jersey Association comprises the fruit growers of Burlington Co., near Philadelphia. Their proceedings are always welcome, for we know as we open the unpretending volume, we shall get facts, and not "talk." The members are men who grow fruit for a living, and have a sharp eye to profit; they give their experience in a few words, and we can commend their reports as models.

"Extra Farming."—*J. P. G.,* of Blair Co., Pa., asks if we think it "extra farming" to raise 300 bushels of Early Goodrich potatoes, or 600 bushels Cuzco, to the acre—the one being 52-fold, the other 75-fold, the seed? This he says was done by Dr. Rowan Clark on a sandy loam manured with stable manure, composted with coal ashes.—Certainly this is *extra*—not *extra* beyond anything we ever heard of, but extraordinary for this period in the history of potato culture, and especially so for the past season. The same writer mentions a calf killed at 7 months 3 days old, which weighed alive 1182 pounds and dressed 714 pounds "clean meat."

Rutabagas.—*W. H. H.,* Allegheny Co., Md., "in raising rutabagas for stock, do you sow the seed in a bed and transplant them like cabbages,—or sow them like turnips where they are to grow?"—They will do tolerably transplanted, but better sown where they are to mature. Transplant only to fill out spots where the seed has failed. The crop is seldom sown before the middle of June even at the North.

Working over Manure.—*"Knoxville,"* writes: "I am in the habit of drawing the manure from my hog pens, cattle stables, and horse barn, directly to the field where most wanted, every spring and fall. If I should simply mix the kinds together under a shed, and leave it six months or a year, forking it over once or twice, would the increased value pay for the extra work?"

Answer.—For some purposes it would, but great care would need to be exercised to prevent serious loss from overhauling, which it would almost surely do, unless it could be kept moist under cover, or well trodden down in a pile. For ordinary field crops, when it is to be plowed in, there would be no advantage. For top-dressing grass, harrowing in upon the surface of land for wheat or flax, or for the garden, no doubt the additional labor would pay.

Labor and Profit in Farming.—*"H. I.,* of West Chester, Pa., expresses his distrust of the statement that six laborers employed upon a farm is the secret of its profits. We have not the details of the farm in question showing just how much of it is profit, but we have no doubt of the general principle, that the more labor we employ upon our farms the more profitable we make them. One man and a boy for a farm of two hundred acres does not pay very well, even if the land is smooth and we use the improved implements in tillage and harvesting. If fruit or truck farming is followed, much more labor is required to the acre than in grazing or grain growing. The road to wealth is found in applying more manure and more labor to less land, rather than in applying less labor to more land, which is the popular maxim in America. The most profitable farming we know of is where labor is most liberally expended in making manure, in drainage, in subsoiling, and in thorough cultivation. It is time farmers had faith in their business and put more capital into it.

Horticultural and Other Societies.—*"We* have taken annual pains to procure a tolerably complete list, with officers' names. The Secretaries seem to be indifferent to the matter, and the reports of meetings are generally meagre. The Jefferson Co., Mo., Society is reported as having elected "Tom Walker" President, but neither his address nor that of the Secretary is given. The Kansas State Hort. Soc. has elected "Mr. Tanner," of Leavenworth, President—and so on, in the most indefinite manner.

Grinding Bones.—*"X,"* asks: "Would a common 'corn and cob crusher mill,' similar to the kind known as the Little Giant, be of any lasting service in grinding bones for manure?"—No. It requires a stronger mill, and more power than such a mill can stand. The best way is for several neighbors to make joint-stock property of a good bone mill, set it up where there is water or steam power, and grind for themselves and others.

Canada Thistles.—*J. H. Gray* writes that his neighbor keeps his sheep in the fields containing the thistles, scatters salt freely over the thistles, and the sheep keep them in subjection. This would doubtless do where the patch is small, but we should not like to buy the salt for some fields we have seen. S. Reynolds, of Maquoketa, Iowa, thus pleasantly writes on the subject: "I once owned some farm lands in the eastern part of N. Y. State, well covered with thistles, as were also all adjoining lands; these I sold some years since—right and title to lands—and thistles too—and thus got rid of them, and followed 'the Star of Empire' as far as Lockport, N. Y., and in a short time found thistles there on my farm, on a stony piece of about half an acre. I made a pasture lot of that for two successive years, and salted my sheep and cattle on the heads of the pests, and they disappeared from that quarter by diligent attention. But I had neighbors, (as most people have,) who were contin-

ally turning out pest seeds, like scandal without parentage, to be wafted with the winds wherever they would. I soon found other patches, and the same means produced the same effects, (on the thistles, I mean.) Not so of all others, for I found the difficulty of the boy catching birds—the right kind of salt, and then to get it on their tails. I have 'left all,' the wine and the oil, (of butter,) the sheep and goats of the flock, and followed that 'bright particular star,' to where the presence of the Canada is not as yet, but where good bread and butter are to be had in abundance by industry, and shame from wearing patched garments is no hindrance to honest thrift. Never much Canada thistles; they love it. If they are common all about you, leave them, for they will never leave you, not even in your grave, for they will root deeper than that. If in small patches, they can be overcome by salting the herds on their heads for two seasons, if properly attended to; but if negligently, it is of no use." The Gardener's Monthly takes us "up" for warning people that the thistle is spreading in the "West." In a journey of 3,000 miles, (going and coming, and across lots,) our friend Meehan did not see any. He has travelled to some purpose if he has found out where "the West" is, and we advise him to turn his attention to discovering that hitherto unseen country, "down East." That our associate saw Canada thistles in his western trip, we do not doubt. The writer has seen them in Michigan—which is pretty well "West," and believes that the Legislature of that State has passed a law to prevent their spreading.

Increase of Foxes and Woodchucks.—A Massachusetts correspondent complains of these animals in consequence of the stringent dog law. The remedy is a heavier bounty upon them. Men were always better hunters of these animals than dogs, before the law was passed, and with a bounty heavy enough, any neighborhood will soon be freed from them. Of course, they will multiply if nobody hunts them. Caterpillars will soon destroy an orchard, if their nests are not disturbed. Foxes are best captured in their holes when young, and woodchucks are readily destroyed at any time.

The Dark Ages Still in England.—*"The Leicestershire (Eng.) Chamber of Agriculture,* after long deliberation, has declared against intellectual improvement among the agricultural class, on the sole ground that they would be less efficient as laborers. It therefore opposes the education of the children of agricultural laborers." The ignorance of this class is their great defect over here. John Bull is still doubtful about the mowing machine; he will get to it a century hence.

Kicking Cows.—*"H. L. T.,* Media, Pa., recommends putting calves to them for the purpose of fattening for the butcher, especially in winter, when veal is high. He has fattened two upon such a cow, selling them for \$17 and \$20. It is very rare that a cow cannot be cured of kicking, by firm and gentle treatment. Put her in stanchions, raise one of the fore legs, slip a strap over the hock knee, and keep it in place by thrusting a pin between the strap and the joint. She will find kicking very different, and if there is no noise and no abuse, she will soon be cured. Kicking men make kicking cows.

Ambas Americas.—Both Americas; an Educational, Biographical and Agricultural Review. This is the title of a periodical in the Spanish language, published in New York. It is under the direction of Senor D. F. Sarmiento, Minister of the Argentine Republic, and is intended to make the South American Republics better acquainted with our educational systems, our agricultural improvements, and the like. It could not be in better hands than those of Senor Sarmiento, for it would be difficult to find one who is so thoroughly alive to the importance of popular education, or who more readily appreciates every improvement in agriculture and the arts. The two numbers before us give a good variety of matter, with illustrations of our school-houses, agricultural machines, etc. We are glad to learn that the periodical meets with appreciation in the South American States, and we wish it every success.

Breaking Up Prairie Land.—*"H. R. H.,* inquires the best time to break up dry rolling prairie sod, and the best crop to put on. These, and the best mode of breaking new prairie sod, are practical questions, upon which a comparison of the views of the experienced is desirable. Please let us hear from such.

Onions and Carrots.—*"J. S.,* A favorite way of growing onions about Narragansett Bay, R. I., is to cultivate them together with carrots. The onions are sown about the 1st of April, in rows one foot apart, and the carrots about June 1st, in every third space between the rows, making the carrot rows three feet apart. The onions are taken off early in August, when the carrots have the ground. As carrots make the most of their

growth after the middle of August they have ample time to make a good crop. The yield, in good soil and with good treatment, is about 500 bushels of onions, and 400 of carrots to the acre, worth from \$60 to \$80. We have tried this succession crop several seasons, and have no doubt that it is the best way to get cheap onions and carrots. We have sometimes planted the carrots between every two rows of onions, but this diminishes the yield of onions somewhat and increases the cost of cultivating the carrots, as it has to be done by hand. If left three feet apart the horse cultivator can be used. Of course when two crops are taken in a season, manure must be used very liberally. At least forty loads of stable manure, or its equivalent, should be put on, and this will pay much better than little manure and small crops.

Professorship of Agriculture.—Hon. E. W. Cook, of Havana, N. Y., has recently endowed a chair of Agriculture in the People's College, and the Trustees resolved that it should be known as the "E. W. Cook Professorship." The college has a fine farm of over 100 acres attached to it, and it is intended that the instruction shall be practical as well as theoretical.

Setting a Forest.—*"E. M.,* Wayne, Me. If you have good land and wish to set a forest "parly for the pleasure of it and mainly for fuel," by all means take the Sugar Maple and don't bother with Ailanthus, White Willow, and Cottonwood, which we only recommend for their quick growth where shelter is the main object. With a Maple grove you can have pleasure and fuel with the sweetening agent. We should much like to hear of a well-conducted experiment in Maple planting. Set the trees much thicker than they are to stand finally, as the thinnings will give a constant supply of fuel.

Blood as a Fertilizer.—Lewis Lawshe of Georgia says: "I have the blood of about 1000 hogs mixed with dry manure, at the rate of one peck of manure to one gallon of blood. How can I apply it to garden truck?" Fresh blood contains not far from 89 per cent. of water. A gallon weighing, as it does, not far from eight pounds, will contain a pound and six tenths (1.6 lbs.) of dry matter, of which about 15 per cent. is nitrogen. Therefore six gallons will contain about one pound and a half of nitrogen. The addition of a gallon of blood to a peck of dry manure will not increase its bulk, so we may reckon that six pecks, or a bushel and a half, of the compost will contain a pound and a half of nitrogen, that is, one pound to one bushel. A pound of nitrogen in this form is worth at least eighteen cents, and this may be taken as the value of the compost per bushel. It may be used freely for corn, root crops, etc., in the field, and for all garden crops. The composition of dry blood and of dry flesh is almost identical. In the natural state blood contains a little more water—not more than 5 or 6 per cent.

Cows at Calving Time.—*"J. J. T.,* It is particularly important to guard against constipation, and at the same time not reduce the strength of the cow by giving salts, etc. The best plan is, to give the cow for a week or ten days before calving a pint of flaxseed oil and morning. It is a laxative, and at the same time highly nutritious. The best way to feed it is to boil it for half an hour or so, and if the cow does not drink it readily add a pint of corn meal. If the bowels become too much relaxed give more corn meal, but do not lessen the quantity of flaxseed. Continue this feed for a week after calving, and as much longer as you wish rich milk and plenty of it. With butter at forty cents per pound it will pay to feed the cows all the corn meal they will eat.

Sugar Beets.—*"H. A. H.,* wishes to know if the sugar beet will flourish in Minnesota. Crops would not be so large as where they have a longer season, but they would probably be remunerative for feeding cattle. Our seedsmen will respond to the name of sugar beet.

Dogs in Tennessee.—A correspondent from this State says: "A fair average is a pup to each child, though I once knew it to fall in a family where they had 17 children and but 8 dogs. Making sheep scarce is not the only evil of familiarity with this animal. The more dogs in a family, the more doggish the people. I go in for a dog law."

"Italian Silver Top-knot" Fowls.—D. Mitchell. We never heard of a breed of fowls of this name. The Silver Spangled and Golden Spangled Poland fowls are excellent layers, non-sitters, and have fine top-knots. The White Leghorns are excellent and persistent layers, and hardy, good fowls. This is an Italian breed. The Black Spanish are a very stylish and elegant breed, requiring warm quarters in winter, and reward care with many large and beautiful eggs. These, too, are non-sitters. A trio, cock and two hens, of any of these breeds costs from \$7 to \$20, according to quality.

Pea-combed Fowls.—"Subscriber," of New London, Ct., does not understand the term "Pea-combed." It is used with reference to Brahma fowls only, so far as we know, and refers to combs which show a triple character, the central comb being the largest, and the other two growing uniformly on each side of it, and each distinct. The points should not run into confusion, as in many rose-combs, and are often quite small.

Manure Scarce in Illinois.—"Gardener," writing from Manito, Ill., says: "I want a substitute for stable manure for my garden * * * Cannot buy manure for love nor money." We would throw no doubt on the veracity of our correspondent, but still we do think money enough will buy a little manure, even in Illinois, within hauling distance of our correspondent, which is, about 1 mile, if a return load, or 2, otherwise. Still it is cheering to know that manure is valued in a State where we formerly had so many subscribers complain that the *Agriculturist* had too much to say on this subject, which was of no importance whatever to them.

Beet Sugar Factories.—"H. K.," St. Louis, Mo. The making of sugar from beets in this country is receiving increased attention, from the partial disorganization of labor and the small crops of cane sugar in Louisiana. It is estimated that one-third of the sugar used in the world is made from this root. In Germany, where the owners of the factories work large plantations to grow the beets, the men are paid to get from 16 to 19 cents a day, and the women from 15 to 15, working 14 hours a day. When the capitalist has to pay six or eight times this price for labor, it changes the problem very much. If it can be made to pay anywhere, it will be in the West, where land is cheap and productive. A large capital is required, and expensive apparatus, buildings, etc. Beets are usually fattened on the waste products, which, in turn, furnish manure for the fields. The establishment of a beet sugar factory is a great undertaking, but, while the price of sugar remains anywhere near present rates, it would seem to offer an attractive investment for capital.

Boiled Grain for Fowls.—"E. C.," Vt. It will pay to boil corn and barley, as experiments show. Less is gained in boiling other kinds of grain. Potatoes should be boiled and mashed, and fed warm.

Potato Experiment.—S. N. Beers, of Fairfield, Conn., writes to the *American Agriculturist*: "I planted side by side, of the Early Goodrich variety, 1st, sets or cuttings made entirely from the seed ends of medium-sized potatoes, the cuttings containing about two eyes each, and planted two in a hill; 2d, two-eye cuttings, made entirely from the stem ends of potatoes; 3d, whole large potatoes. The whole potatoes came up first, and kept about a week ahead of the others through the season. Between the cuttings made from the seed and stem ends, no difference could be perceived either through the season or when they were dug. If the cuttings from the tips had consisted of as large pieces as those made from the butts, it might have been different, but as the eyes were thicker on that end, they could not be made so large. But when the rows that were planted with whole and large seed were dug, it was found that the yield was one-seventh larger by measure, but that the increase was mainly in small and unmarketable potatoes, and that the large ones were not as smooth in appearance as in the other rows. I also tried cuttings from the seed and stem ends of the Harrison, side by side, and saw no difference."

Fish Ponds.—An old subscriber wishes to know about the construction of fish ponds. No great skill is required in making the embankment. The point of difficulty is the outlet, which should have a gate to drain the pond at pleasure, and a place for overflow, sufficient for the largest freshet. Each side of the gate, for a considerable distance, will need to be fitted with battened plank, to prevent leakage. If the soil is sandy or light gravel it will need to be puddled with clay upon the inside of the embankment. If the object is to raise young trout by artificial hatching, several ponds will be needed for the successive broods of fish, and the stream should be fed with copious perpetual springs. If one has natural facilities for raising fish it may be made to pay very well and add variety to the table. Dr. Garlick's work upon fish culture is out of print, and we know of no other good manual upon the subject.

Bees in April, by Wm. W. Cary.—All colonies should be examined early this month, hives should be cleaned of all dead bees and filth, and queenless stocks added to others. Treat very weak and puny swarms in the same way, otherwise they will be very liable to be robbed by stronger colonies. A few pounds of sugar syrup fed now will stimulate breeding and will pay well. Much care must be used in handling bees at this

season to prevent robbing. An ounce of prevention is worth more than a pound of cure. I gave directions last month for feeding unhatched eye meal as a substitute for pollen; it now remains to say a few words about feeding honey, or sugar syrup, either to stimulate breeding or to prevent starvation. A bee feeder that does not fit in its construction provide for replenishing the feed without exposing the operator to the attacks of the bees, is not a half better than a piece of old comb placed under the cover of the hive, the cells of which can be readily filled by pouring the feed upon it. Some of the patented devices for feeding bees are not nearly so good as this simple way. Many stocks are lost this month for want of sufficient food for a few days, or until they can get fresh supplies from natural sources in sufficient quantity to supply their daily wants, and for developing their brood. To advance breeding, give what the bees will use in feeding their brood. This may be ascertained by examination in the movable comb live, and made sure of in others by feeding more liberally, say a half pound daily. Increased interest has been awakened on the subject of feeding bees by the publication of the results from practical men, and also by the efforts of patentees to sell their feeders. The advantage depends upon scarcity of early forage, and the condition of the stocks. I advise all to feed a stock or two, note results, date of swarming, and amount of surplus honey, and judge for themselves.

The Ayrshire Herd Book is in course of preparation by Mr. J. N. Bagg of West Springfield, Mass., who is a member of a committee appointed by the Association of Breeders of Thorough-bred Neat Stock, to superintend its issue. Some 700 pedigrees have been passed as approved. After receiving the record of this spring's calves the work will probably be published.

Immigrants as Farm Laborers.—If a man would be sure of faithful service, he must be a good master, or "boss," as the phrase is with those who think the name servant is derogatory, and that the name master should not be used because the other is implied. Of all servants, or hired farm "help," the immigrant responds most quickly to kind, generous treatment. He should find that in America the relation of master and servant is one of mutual dependence—and if he sees that you recognize that fact and treat him as a man and independent citizen, and fairly in all respects, you will be loved and honored by him. The way to get good farm hands is to get a neighbor coming to the city to make the selection for you, if you cannot come yourself. We cannot attend to this business.

New Kinds of Oats, so largely advertised and held at such high rates, are sure to give disappointment if any one buys them with the expectation of getting any such crops as are reported in the circulars and advertisements. We do not very much doubt that the statements may be in the main true, and if any of our readers wishes to be able to tell just as big stories, let him take a few large, plump oats, and sow them in drills, two feet apart, in good garden soil, pull the weeds, topdress with some fine compost or ashes, hoe them or rake the ground over two or three times, and count the kernels at harvest time. Oats respond quickly to good soil and culture, and such as have it are worth two or three times as much for seed as others, no matter how well selected.

Hens for a Large Hennyery.—Wm. B. Shiner. Calculate to raise your own fowls for next winter and spring's laying, especially if you are going to raise a great many. Select fine old birds and breed carefully. Subjects connected with the profits of, and the best arrangements for, large poultry establishments, have been recently discussed in our pages and probably will be again. We have few records of experience to refer to.

Rapid Growth of Salmon.—"E. C. P.," Mass. The statement that a 10-pound salmon gained 11½ pounds in a visit of 37 days to the sea is exceedingly improbable. The Duke of Ashol, in March, 1899, caught three salmon on their way to the sea, weighing 30, 11½, and 13½ pounds each; these same fish having been marked by a copper band round their tails, returned in six months, and were again captured, having increased to 17, 18, and 19 pounds each. This is a little over a pound a month, and it will be noticed that the gain is very nearly the same in each instance. This shows gain enough, and, as it is well authenticated, there can be no doubt about the facts. It is ascertained that the size of these fish depends very much upon the extent and richness of their feeding grounds, the largest fish being found in the largest rivers. The fish is exceedingly voracious in its visits to the sea, and in its early years grows very rapidly.

Feeding Scraps, or Scrap Cakes.

"R. F. B.," North Bridgewater, Mass., asks: "Is it safe to feed scraps to swine? Does the process of separating

the fat destroy the Trichinae?" We do not like the feeding of hog to hog. The feeding of beef scraps is not subject to this objection. Both beef and pork scraps have been exposed to a temperature far higher than boiling water, destroying all trichinae and other parasites.

How to Steady a Fan Mill.—George R. Schamp of Illinois, who hopes to be a reader of the *American Agriculturist* as long as he can read, suggests a very simple way of holding a fan-mill firmly upon the barn floor. He simply puts under each of the two rear legs a fourpenny or sixpenny nail. The heads sink into the feet, and also into the floor, and hold the mill steadily.

When Will a Mower Pay?—C. L. Neal. It will not pay for ten or a dozen acres of meadow, if you have any neighbor, with a machine, whose services you can procure in haying time. If you can cut hay for your neighbors as well as for yourself three or four weeks, it will pay to buy a mower. A good machine will cut an acre an hour, and soon pay for itself if you have work.

Animals Named.—John N. Clark, Old Saybrook, Ct. The "queer little mole" you sent is one of the shrews, and not a mole. Judging from the specimen sent, it is Forster's shrew (*Sorex Forsteri*) figured in the last volume, page 283, (August No.).—The animal sent from Maine arrived in a state of decomposition, and the letter was lost. It was originally a very fine specimen of the star-nosed mole (*Condylura cristata*), described and figured in the last volume of the *Agriculturist*, p. 53, (January No.).

Sulphuric Acid as a Fertilizer.—The price of Oil of Vitriol was given with the fertilizers, not so much because of its intrinsic value as a manure if applied alone, as of its extensive use in the preparation of superphosphate from bones. It has, however, value used alone, but it is difficult to say exactly what it is, because in economical experiments it is used in the cheapest available forms found in the market, namely as sulphate of lime, (Gypsum,) or sulphate of soda, (Glauber's salt).

Drilling in Corn vs. Planting in Hills.—"J. W." We agree with you that more corn can be raised per acre on rich land from drilling in corn than from planting in hills, and certainly a good deal more fodder. The question is, whether the seed should be drilled continuously in the row, or dropped two, three, or four, together, every twelve, fifteen, or twenty inches apart. The planter we use drops the seeds in the rows every twenty inches. The rows are three feet four inches apart. Continuous drilling, dropping the seeds say six inches apart, might be better. Where fodder is not a special object, or where the land is poor and weedy, we think it better to plant in hills, equally distant each way. It is very convenient to drill in corn, because you can put in the seed as fast as the land is plowed and harrowed; whereas in planting in hills both ways you must finish preparing the whole field before planting a kernel.

Feeding Milch Cows.

There is a large class of dairymen who are engaged in supplying large towns and cities with milk. Not less than thirty millions of gallons are sold by this class in this State alone, and the quantity is very steadily increasing with the growth of our city population. As they have to supply families daily whose wants are nearly uniform, it is an object of great importance to secure in their herds a uniform flow of milk throughout the year. This is done by a regular succession of new milch cows, coming in every month, but this is very expensive, if you have to purchase new cows or to exchange your own extra milkers for what you can find in the market. In the recent Agricultural meeting at Hartford, Conn., the discussions turned quite largely upon this topic. We found that all the milkmen present agreed upon three things, viz.: the importance of a good selection of cows, all to be extra milkers; the cows to calve in regular succession, so far as that matter could be controlled; and extra feeding, especially in the winter. All agreed upon the importance of good shelter, but some preferred a couple of hours of sunshine for their cows in the middle of the day, while others kept them in the barn from fall

to spring. The last could not perceive any ill effects from the confinement. On the contrary, they thought the exposure to the cold required more food and lessened the flow of milk. Nearly all were agreed upon the great value of cutting the long fodder. One thought that in cutting for his herd of thirty cows, the saving paid for his cutter, which cost \$130, twice a year. All were agreed upon the superior value of early cut hay for producing milk. There was much solicitude manifested to learn how to secure a full flow of milk in the months of November and December, during the change from grass to hay. S. M. Wells, of Hartford Co., begins early in the fall with green corn fodder, and follows it with rye sown in August on his richest land. This gives an excellent green fodder until the snow falls. Then he feeds roots and steamed hay. He has water brought into his manger, so that the cows can drink at pleasure, which he has seen them do seventeen times in a day. They are carded regularly and kept in warm, clean, and well-ventilated stables. He feeds, in addition to the above, rowen, roots, and cotton-seed meal, linseed meal, and bran. He feeds very liberally, and reported a very large average yield of milk. In one case, when he wanted to secure a large amount of butter, he fed one of his cows daily with six quarts of cotton-seed meal, four quarts of corn meal, and four quarts of bran, besides other fodder. H. S. Collins commences early with green corn fodder, and follows it up with steamed food. He uses some parsnips and other roots, but thinks they are chiefly valuable for giving cattle an appetite. It may be stated here that Mr. Collins has a very stubborn soil, in which he finds it difficult to grow roots, and this probably influences his opinion. He makes great use of corn stalks cut up by the roots, and thinks them equal in value to good hay, when cut fine and steamed. One gentleman, who had about fifty head of cattle, grew cabbages very largely as a fall feed for his milch cows. These hints ought to be of value to butter makers as well as to the milk producers. With proper care given to extra feeding, it would be easy in most dairies to prolong the butter making season at least a month in the fall, when butter brings a high price.

The Olive and its Culture.

The cultivators in the Southern States seem to have fully made up their minds that it is for their interest to grow a variety of products, and not depend upon one alone. This is wise, and we hope that before many years the capabilities of our Southern States will be more fully tested than they have ever been before, and though there will be some failures in the trial of new products, either from peculiarities of climate or want of experience, the general result of the efforts now being made will be of benefit, not only to a particular region, but to the whole country.

Among the things to which attention has been turned, is the *Olive*, and we have been asked to give an article on its culture. There is but little experience in this country to draw upon. We have seen some of the groves that were planted in California by the early Spanish missionaries, but they can hardly be said to be cultivated, and are only moderately productive. In some of the Southern States the tree was introduced several years ago, but what the present condition of the plantations is we are not informed. In the absence of information from home sources, we translate and condense from Du Breuil an account of the culture, as followed

in the olive districts of the south of Europe. The olive will stand severe freezing when it is quite dormant, but after vegetation has started, it is readily injured by cold. Those localities where late spring frosts occur should be avoided, and in the olive countries an elevated situation is preferred to a low one, on this account.

While the olive will live in almost any soil, and even flourish in a rocky and barren one, yet the crop is greatly affected by the fertility of the soil. Any deep, rich soil, in a situation sheltered from the prevailing cold winds, will answer for starting a plantation.

Propagation may be done in all the various ways, by seeds, cuttings, layers, root cuttings, grafting, etc.; indeed, there are few trees that are multiplied with equal ease. The first question that will be asked by those who wish to experiment in this culture will be, "How can we get a stock to start with?" This is just the point on which we cannot inform them, and it



OLIVE BRANCH.

would be well for those who have trees from which cuttings can be spared, to advertise them for sale, or offer them for free distribution. It would be a good thing for our new Commissioner of Agriculture to import these and other plants not readily obtained. Congress could do much more good to the country at large with an experimental farm in one of the Gulf States, than it can ever do with one at Washington, which is neither North nor South.

Du Breuil enumerates fifteen named varieties cultivated for their oil, and seven, the fruit of which is used for pickling. These varieties differ in the form of the tree, its hardness, adaptation to different soils, productiveness, and in bearing annually or biennially. The fruit also

varies in its shape, color, flavor, and in the quantity and quality of oil it produces. As the fruit presents so many varieties, it is important that those undertaking its cultivation should select those best adapted to the conditions in which they will be placed, and as we cannot give space to the descriptions, we must refer those interested to Du Breuil's *Arboriculture*, 2d vol., page 993, (Edition of 1837).

The seeds are sown for the purpose of procuring stocks upon which to graft the desired varieties. The seed is so oily that it is a long time before the moisture necessary to germination can penetrate it, unless it be soaked in strong lye before planting. Seeds when thus treated come up the same year that they are planted. The seed bed is of well-enriched soil, and the nuts are put in in February, in rows about 2 feet apart. A furrow is made about 2 inches deep, and the seeds are dropped about 2 inches apart, and covered; the after treatment is the same as that of other seedlings.

Cuttings are made of branches from $\frac{1}{2}$ of an inch to an inch in diameter, and 10 inches long; they are set like other cuttings, in rich soil, with three quarters of their length below the surface, about 18 inches apart each way. All the buds are allowed to grow the first year, and the second year the strongest shoot nearest to the ground is chosen—and all the rest removed. This shoot is trained to a stake, to insure an upright growth. The fifth year the young trees are set about 5 feet apart, in nursery rows, and by proper pruning made to form a pyramidal or other desired shape. When twelve or fourteen years old, the trees are set where they are to remain, and planted about 30 feet apart.

A curious protuberance, or knot, forms on the stem of the olive—an aggregation of undeveloped buds. These are removed from the tree by means of a knife, and planted out like cuttings, or rather like bulbs, which they more resemble.

The layering and grafting of the olive present nothing essentially different from the same processes as applied to other trees. Wild seedlings are used for stocks in Europe, and A. J. Downing suggested that our wild olive, or Devil Wood, (*Olea Americana*), which is found in the Southern States, might answer the same purpose.

Pruning, cultivation, and manuring, are practised; it is found in France that good cultivation pays with the olive as with other fruit trees.

The tree bears when twelve or fourteen years old, and continues to produce fruit to a great age. Like other fruits, it is subject to the attacks of diseases and insects. Pruning and accidents produce a kind of rot, which has to be cut away, and the cavity filled with mortar. Insects of various kinds attack not only the tree but the fruit, and often cause the loss of a crop in a short time. Sometimes the trees will stop bearing without any discoverable cause.

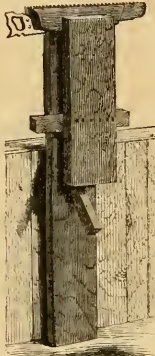
The uses of the fruit are well known. It produces a most valuable oil, which in some countries is one of the necessities of life. The pickled fruit is to be considered rather as a condiment than as a food. The fruit is first pickled before it is thoroughly ripe, soaked in lye until it penetrates to the nut, then in water for five days, the water being renewed twice each day; it is then put in a strong brine which has been boiled with spices and allowed to cool.

Whether a product that requires to be so long waited for will ever attain much favor with our impatient people, we very much doubt. Against this tardiness there is to be placed the longevity of the olive, and the great value of its product when obtained. We shall be glad to hear what

success attended the plantations that were made many years ago in Georgia and Mississippi.

Saw Filing.

It is a great art to file a saw well. Few men do it who attempt it, yet almost all who try make the saws run so much better that they are quite satisfied. In saw filing it is an important thing to have the blade firmly held at a convenient height and in a good light. We figure a simple vise for holding the saw. An upright board about four feet long, having a piece of wood, shaped to form one of a pair of vise-jaws, nailed upon the upper end, is fixed against a bench or window sill. Upon this, near the middle, a two-inch strip is fastened, and a shorter board with the mate jaw upon it is nailed upon the strip to match, the nails being in a straight line. The jaws of the vise will be found to have a very little play—enough to receive the saw-blade—and by gently driving a wedge, to spread the boards apart below, the grip or bite of the vise will be found considerable. The art of filing a saw well is only attained by a person having a steady hand and a true eye. Having the saw firmly grasped by the jaws described close to the teeth, first make sure that the points of the teeth are on a true line. If any extend above the line, file them squarely down to it. It is better that a tooth should not touch at all than that it should have all the work to do, and nearly all the work comes on teeth which project beyond the line, if any do so. The file used must be in proportion to the size of the teeth, in order to go in deeply between them and leave a sharp, clean angle. File so as to retain the bevel of the points and the shape of the teeth unaltered, unless you choose to take the responsibility of making a complete change in the saw. The guide to a correct bevel is the glance of light from the window, which should be the same from each tooth, both before and after it is filed. The whole length of two teeth must be touched by the file at each motion. The teeth of each “set” are filed separately, but more minute directions would only confuse one who has not practiced saw-filing. There is no mystery whatever about it.



SAW-HOLDING VISE.

Bark-Lice—Scale Insects.

Quite a quantity of communications have accumulated upon “the Bark-louse,” the writers using the same term when speaking of very different insects. The most common Bark-louse,



THE BARK-LOUSE.

as well as the most destructive, is the *Aspidiotus conchiformis*, which from its shell-like shape is by some called the Oyster-shell Bark-louse. The appearance of the insect in winter and early spring is shown in the engraving. One corre-

spondent thinks he has discovered the whole story of the Bark-louse, and sends us a long communication describing the manner in which the insect throws off her eggs, which fall to the ground, where they remain until spring, when they are hatched and the young insects ascend the tree. The scale he regards as only the dead body of the mother, left after “throwing off her eggs.” Had the writer carefully lifted one of these scales he would have seen the difference between guessing and observation, for he would have found under each quite a number of little white eggs. These are not thrown off at all, but remain under the scale and are hatched there. The history of this insect is briefly this. The young lice are hatched in June, travel to the twigs, where they fix themselves by the proboscis, and subsist like other plant-lice by sucking the juices. After they have undergone their changes, the perfect male being winged and the female wingless, the female increases much in size and finally dies, leaving her eggs enclosed in the remains of her body, which form a protecting scale, of the color of the bark. The scale itself is not injurious; it is a record of past injury and a warning of trouble to come. This Bark-louse is believed to be imported, and is death to the trees if neglected. Another Bark-louse shows itself in the scale state as milk-white spots; underneath this are the eggs which are of a red color. Mr. Walsh considers this an American species, and has named it *Coccus(?) Harrisii*—Harris’ Bark-louse; it is less common than the other. The practical point is the destruction of these insects. Mr. B. D. Walsh, in the Practical Entomologist (a journal we much miss), states that the scale is so impervious to solutions of soda and potash that they do but little good unless applied soon after the insect is hatched. He tried kerosene, but that killed a share of the limbs as well as the insects. Mr. C. V. Riley, in the Prairie Farmer, suggests the use of Carbolic acid. This acid, or its equivalent, is used in the “Cresylic Soap,” and as this has been found efficient in destroying other insects, we hope to hear that it has been useful with the Bark-lice. The natural enemies are the Lady-birds and birds. Watchfulness is another help—never plant a young tree with scale upon its bark. No nurseryman who cares for his reputation will send out trees thus affected. We shall be glad to hear of any successful attempt to stay this pest, which threatens to destroy young orchards.

Weeds—Rib-grass.—(*Plantago lanceolata*.)

One of the common weeds of cultivated grounds, especially in the older settled portions of the country, is the Rib-grass, which is also known by the names of Ripple-grass and English Plantain. The much reduced engraving will recall it to those who do not know it by name. It belongs to the same genus as the common Plantain, so frequently found about door-yards, although the flower spikes of the two are so unlike that the relationship is not striking to any but a careful observer. Under favorable circumstances this species grows two feet high, and its perennial root forms a large stool. The Rib-grass cannot be classed among the worst weeds, as it is eaten by animals, and is not particularly aggressive. The chief harm it does is to occupy the soil to the exclusion of other plants. It has been recommended as a forage plant, but is so inferior in quality and productiveness that it is at present not esteemed. In clover fields it is often the most abundant weed, being generally sown with the seed. The seed of the clover and the Rib-grass are so near-

ly alike in size that their separation is difficult, and as they resemble one another in color, the presence of the weed seed is not noticed in ordinary inspection. A magnifier of moderate power shows the difference at once; the seed of the clover is in shape somewhat like a miniature bean and alike on both sides, while that of the Rib-grass is convex on one side and concave on the other. Prof. Buckman, of England, who some years ago made a careful examination of



TRIB-GRASS—(*Plantago lanceolata*.)

the seeds in the London markets, found Red Clover seed to contain from one million to two and a half millions of Rib-grass seeds to the bushel, quite enough, should the seed start before that of the clover, to stock the land. An examination of samples of seed from our best dealers showed them to be remarkably free from seed of Rib-grass, as well as other weeds.

THE WHITE FRENCH TURNIP.—The people of the State of Rhode Island and Providence Plantation have long had a most excellent variety of turnip, known as the White French. Tradition says that it came in with the French fleet in the Revolution. However that may be, it was mainly a Rhode Island institution until, some years ago, we distributed it far and wide among our seed premiums, and we have learned from numerous sources of the satisfaction it gave. It is a white winter turnip, and raised the same as rutabagas, to which it is vastly superior. To our taste it is the best of all turnips. That it holds its own in Rhode Island is shown by some excellent specimens from the farm of Col. Geo. E. Waring, at Newport, and that it is upon the lists of the principal seedsmen. Its only fault is that it grows less smooth than some others, and is not so taking to the eye.

Channel Island Cattle.

JERSEYS AND GUERNSEYS.

In an article on the Channel Island cattle in the January number, page 53, there was a brief account of these Islands, their location, products, etc., and of the rich milk of the cows, which gives the islands an enviable fame for fine butter, and creates the great demand for cows for exportation. The Jersey (incorrectly called Alderney) and the Guernsey are as distinct breeds as the Short-horn and the Ayrshire.

THE JERSEY COW.—Dr. Twaddell, of Philadelphia, in his account before the Philadelphia Agricultural Society, says of the Jersey cows: "They are of all shades of color from a pale yellow fawn, running through all the intermediate hues, even occasionally to a red. There is often an intermixture of black and gray known as French gray, and that merging into black with an amber colored band along the back, the muzzle being invariably shaded with a lighter color. Individuals are often seen black and white or pure black unrelieved by any other color. A yellow brindle is sometimes seen, but this is by no means a favorite."

The Jersey cow, if good for anything, shows usually bad points to a Short-horn breeder's eye; but if the *hand* of a beef feeder or Short-horn breeder were laid upon the soft, velvety, unctuous, elastic hide, yielding with plasticity to his gentle grasp, he would not hesitate to assert his belief in the ability of the cow to take on flesh, if dry and well fed, and so indeed she would, very rapidly. The skin of the cow figured is very fine; added to all that is called good "handling," its beautiful orange color gleams out through the black hairs, and is especially obvious in the ears, about the eyes, on the udder and teats, and at the base of the tail. When photographed the cow was in full milk, and, of course, low in flesh, as she had no feed but good pasturage. She was, however, in exactly the best condition to show her fine points, as well as her defects,—the small head, large bright eye, thin neck, slender, deer-like legs, large body, full milk-veins, etc. She is owned by Mr. James P. Swain, of Bronxville, Westchester Co., and is twelve years old. Her black color is universal, except a slight russet or amber band down the back, and one of a similar color surrounding the muzzle, and also a light spot or two upon the udder.

We present the engraving as an extreme case, representing well the peculiarities of one favorite class of Jerseys, namely, those having no white marks and being of prevalently very dark colors, with black mouths and tongues.

THE GUERNSEY COW, says the Doctor whom we quote above, "is a larger animal (than the Jersey) coarser in the head, heavier in bone,

regard to the Guernsey that the drawing represents the cow most faithfully, and is, perhaps, the best cow portrait we have ever seen. Her color is yellowish dun, or coffee-and-milk color, shading into French gray, darkest at the edges of the spots bordering upon white. She has an extraordinary depth of body, and her horns are less coarse than is characteristic of the breed.

Mr. Swain writes:

"You ask me for facts in regard to the Guernsey cow 'Cottie' and the Jersey cow 'Ebony.' I will tell you the story of Channel cattle as far as they have come under my own observation.—In the summer of 1845 I employed Wm. Leroy, an intelligent Guernsey man, to build a factory for me, and he interested me in the cattle of his own and the other islands so much that I imported one from the little island of Alderney, two from Guernsey, one from Sark, and two from Jersey. I found but one of them to be a superior cow in every respect. She

JERSEY COW "EBONY," 13 YEARS OLD.

The horns are longer and thicker at the base, not usually crumpled. The rump is more apt to assume that peculiar droop which seems a characteristic of the breed, and there is a want of the symmetry and neatness of form that mark the high-bred Jersey; but as a dairy cow she is fully her equal; for quality of milk and butter she cannot be excelled. The skin is of a splendid rich yellow hue and the udder and teats tinted with chrome." The Guernseys are more seldom seen in this country than the Jerseys, yet

came from Guernsey; gave 32 pounds of milk a day when in full milk, averaging 24 pounds a day for eight months; was never dry during the six years I owned her. She was accidentally killed. "Cottie," now the property of Geo. P. Nelson, Esq., of Scarsdale, is her first calf. She is now 14 years old, has a calf one month old, and I think will do well for 5 or 6 years to come. She has been in milk over twelve years, except two or three months. She averaged during the summer 24 pounds of milk for eight months, and about 8 pounds for the balance of the year. Of the quality of her milk I cannot give you facts, but can in regard to that of her sister. She was so much like her that we could never tell which was the best for quantity or quality. This sister, "Katie," now owned by James Hall, Esq., of East Chester, gave at her height 43 pounds of milk per day and made 14 pounds 5 ounces of butter per week, and averaged 24½ pounds of milk for eight months, and a little less than 8 pounds for the balance of the year. In all the descendants of "Cottie" and

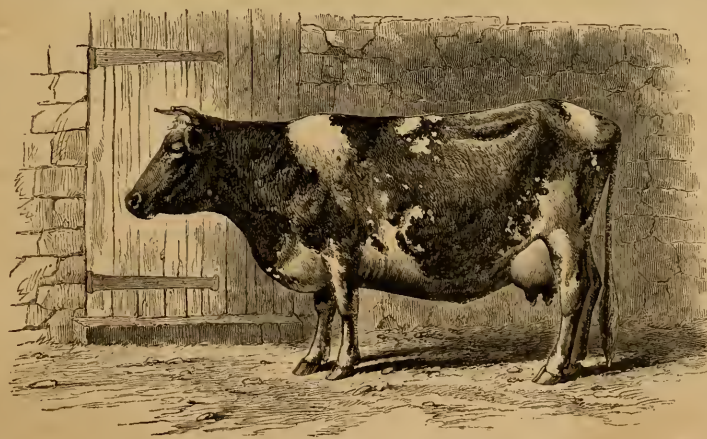
GUERNSEY COW "COTTIE," 14 YEARS OLD.

where they are kept they are held in high esteem. Their lack of the high-bred look and style of the popular breed, and the fact that there are so few of them that they have been bred with the Jerseys, accounts for the general ignorance which prevails in regard to the breed.

We give herewith a letter from Mr. Swain in regard to both these cows, only adding here in

"Katie," and they are very many, I do not think there is a variation of one per cent in the quantity and quality of milk they give with the same care. This family are all that have been of especial value out of seven imported cows.

"I have watched with interest nearly all the principal importations both of Guernseys and Jerseys, and I do not think that there has been



more than one in seven, if so many, that were really superior. For the past five years I have selected from other importations such as suited my fancy, and the old black cow "Ebony," imported by Thaddeus Davids, is one. She, with "Lop-Horn" from the importations of the late Thos. Richardson, and a bull, "Bashan," imported by R. W. Cameron, are the source of my young stock. They improve in beauty, strength of fancy-marks, and color, but not in quality."

Walks and Talks on the Farm.—No. 52.

Mr. Orange Judd, of the *American Agriculturist*, has placed in the hands of the New York State Agricultural Society the sum of Three Hundred Dollars to be awarded as special prizes, of \$100 each, for the best two barrels of White Winter Wheat, the best two barrels of Red Winter Wheat, and the best two barrels of Spring Wheat, exhibited at the next fair. I hope we shall get samples from every wheat-growing State in the Union, and also from Canada. We have never yet had a decent show of wheat in the country. Our pomological friends are far ahead of us in this matter. We have much valuable information in regard to the best varieties of fruits adapted to different sections, and at the meetings of the American Pomological Society have an opportunity of examining fruits raised in different States. But what do we know about wheat and other grains? We hear of the splendid wheat grown in Oregon and California. Some few of us may have been favored with a sample sent in a letter by a friend. But let us have a barrel or two accompanied by a bunch of the ears and straw, and at the same time let us have specimens from Nova Scotia, New Brunswick, and Maine, to compare with samples from Minnesota and Kansas. Let Southern Illinois and Western New York show us what effect climate has on the quality of wheat; Michigan, Ohio, Kentucky, Indiana, Wisconsin, and Iowa, should also contribute. Pennsylvania, too, raises good wheat, and Delaware, Maryland, Virginia, and North Carolina, ought to be able to show us superb samples. And then, what a chance such an exhibition will afford us to get a change of seed, and of the choicest kinds! We could get a bushel from Canada, and a bushel from Southern Illinois, or from Virginia, and thus, if of the same variety, ascertain whether wheat brought from the North will ripen earlier or later than seed brought from the South—a question on which authorities hold different opinions. For one, I feel grateful to Mr. Judd for calling attention, by his liberal offer, to the importance of exhibiting and comparing our best wheats from different sections of the country. The prizes are worth competing for, but aside from that, wheat growers should do all they can to make a good display for the sake of eliciting useful information, and enabling us all to get a change of seed. I understand the intention is to give all the exhibitors an opportunity of selling their wheat at auction on the fair grounds without charge.

The dairymen of Herkimer County are in a sad condition. Two or three years ago, they complained that the State Agricultural Society was wholly in the interest of the wheat growers, and did nothing for them. The Society has done something for us. It offered nearly as large a Premium for the Best Barrel of Wheat as for the Second Best Linen Diaper. But when it seemed that the midge would cause the entire abandonment of wheat growing in Western

New York, we got no help from the State. We fought it alone, and conquered. The dairymen have suffered greatly from a disease among their cows, and I, for one, am very glad that the State, through the influence of the Society, has authorized some of the ablest scientific men in the country to investigate the matter at the public expense. But the dairymen should not complain of being neglected. They have now another trouble. We had supposed that, as they have received double and treble prices for their cheese, and as it takes less labor to produce a dollar's worth of cheese than a dollar's worth of wheat, or of potatoes, or corn, they were making money. At a recent meeting of the Little Falls, (Herkimer Co.) Farmers' Club, this subject was discussed, and every one of the speakers presented statements of receipts and expenditures of dairy farms, showing an actual loss with cheese at 14 cents per pound. Before the war, with cheese at 7 cents per pound, they made money, so at least they now say; but at the present time, owing to high wages and taxes, there is no profit in making cheese at 14 cents. Here is one of the reported statements:

"Hon. Josiah Shull, of Mohawk, has a farm of 81½ acres, which cost \$130 per acre. He keeps 20 cows. His estimate is as follows, making no account for the farm:

RECEIPTS.	
Twenty cows yielding 8,337 pounds of cheese, whole sold for \$14.25.8 per hundred.....	\$1,186.33
Increase on cotted (cutter?) for beef.....	40.00
Calves.....	35.00
Total receipts.....	\$1,261.33
EXPENSES.	
Boy six months and board.....	\$150.00
Man, including board.....	300.00
Fertilizers—plaster, &c.....	18.00
Taxes.....	78.00
Horse-shoeing and other repairs of farm implements.....	50.00
Wear and tear of implements.....	65.00
Average repairs of fences and buildings.....	175.00
Average depreciation and interest on stock.....	180.00
Insurance.....	4.00
Incidentals.....	50.00
Caring milk and manufacturing cheese.....	215.00
Total expenses.....	\$1,305.00
Loss.....	\$44.33

In this estimate, it will be remarked that nothing is charged for farm, for female labor, or for superintendence and work by Mr. Shull and family. All the grain raised upon the farm is consumed by them and stock. It will be seen that the cheese costs more than \$14.25 per hundred. The statement was considered by the Club a very fair estimate."

If this is a "very fair estimate," Mr. Shull either paid too much for his land, or he does not farm it to the best advantage. Perhaps, however, the house and buildings are expensive ones. He paid \$10,595 for the farm. If the house is worth \$10,000, the land cost him \$595. This is more than it is worth, according to the above statement. An amateur drover took a lot of cattle to New York, and lost money by the operation. "But then," said he, in relating his experience to a friend, "I had the pleasure of their company down." Mr. S. has the pleasure of looking at his 20 cows and the "beef critter" at a yearly expense of \$44.33. The cost is far less than a box at the opera. But, seriously, taking the statement as it appears, there is something radically wrong. The difficulty does not lie wholly in the increase of wages and taxes. The Club admits that formerly they made money with cheese at 7 cents per pound. At this figure, the receipts would stand thus:

20 cows, yielding 8,337 pounds of cheese, @ 7 cts., \$583.59

Increase on animals for beef..... 40.00

Calves..... 35.00

Total receipts..... \$658.59

Loss.....

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Probably the real explanation of the matter is this. The land cost but little, and the farmer and his family did pretty much all the work; they lived economically, had no rent to pay, and supplied the table from the farm, and consequently were able to lay up money even with receipts less than \$700 per annum. They can do so now by adopting the same system. The receipts are double, and the expenses are not more than double, and consequently the profits must be double what they were formerly.—The labor items are as follows:

Boy, six months and board.....	\$150.00
Man, including board.....	300.00
Caring milk and manufacturing cheese.....	215.00
Total.....	\$655.00

The following line, which is taken from the statement, is interesting by way of contrast: Fertilizers, plaster, &c..... \$18.00

Seven hundred and fifty-five dollars for extra labor, and eighteen dollars for extra manure! Reverse the figures for a few years, and cheese-making at 14 cents a pound will pay. And by that time, Patrick and Dutch John, as well as Bridget, will be willing to share profits with the farmer, instead of demanding the whole. Instead of keeping 20 cows on a ten thousand dollar farm, and raising nothing besides, it could soon be made to keep fifty; and instead of the "depreciation and interest on stock" being a charge to the farm of \$9.00 a head, it would improve \$9.00 a head. And instead of getting 400 pounds of cheese from a cow, 500 pounds would be obtained. The receipts would then stand:

30 cows, 500 pounds of cheese each, @ 11 cts.....	\$2,500
Increase in value of stock, beef sold, &c.....	300
Calves.....	40
Total.....	\$2,840

With such receipts, a farmer can afford to pay a liberal sum for hired help. Our only chance of being able to pay high wages and high taxes is by high farming. Low farming necessitates doing your own work, having low-priced land, and adopting an economical mode of living. The fact that all the statements made at the meeting showed that there was no profit in cheese-making, looks a little as though the object was to discourage others from engaging in the business. I am inclined to think the profits have been overestimated, and it will be well for outsiders to wait a while before investing largely in cows and cheese factory shares.

An old friend of mine, now a Methodist minister in Canada, writes: "I once in a while get a chance of a Walk and Talk with you through the *Agriculturist*, and am glad to find you still battling for the right in Agriculture. If you do succeed in getting farmers to farm just right, what will you do with all the crops? It is slow work to convince farmers that they ought to bury their talents in the earth in the shape of underdrains, but I believe what is wrong in theology is right in farming. I was trying to convince a friend of mine that it would pay him to borrow money at 8 per cent, to invest in underdraining his farm. Two years since, the fall was so wet he could not put in his winter wheat, or do any fall plowing. In the spring, the land was still very wet, and not having any of the land plowed, the crops could not be got in till very late. Then came the drouth, and the crops were not worth harvesting. He did not make enough from a farm of 125 acres to pay his single hired hand. One would think such facts would convince him of the advantage of draining, but I have no idea of his doing it. Yet he says his dish is always upside down when it rains porridge." All the poor man wants

is faith—faith that leads to good works. He has too much hope. He hopes for better luck next year—hopes for good crops without using the means. I am not so sure, however, that he had better borrow a thousand dollars at 8 per cent. It is a high rate of interest, and if he has had no experience, he might not expend it with judgment and economy. Let him do a little this spring, and do it well as far as he goes. The result will convince him of the advantages of draining, and next spring he will do more, and he will not stop till the whole farm is drained.

If everybody should farm right, and raise large crops, we should hardly find a market for them. But there is no danger. Our productions do not keep pace with our population. Farming is not popular. And those who stick to the land, and bend all their energies to increase its productiveness, have every prospect of abundant success. Good farming will pay.

"Does it pay me?" I did not say I was a good farmer. I mean to be. I do not preach one thing, and practice another—any more than I can help! But supposing I did not make it pay, what would it prove? One of the newspapers recently said that I "had succeeded in applying science to Agriculture in a common-sense way, and in making it pay." I have never said so, publicly or privately. The man who wrote the above sentence does not know much about farming, or he would not have been so willing to assume as true what he could have no means of knowing, and what is so improbable in itself. It would require pretty conclusive evidence to make me believe that any purely scientific man had made farming pay. Watts would never himself have succeeded in manufacturing steam engines with profit. It was his partner's business talents that gave him his fortune. One of the very ablest agricultural chemists of the age once told me that he did not believe he himself could make farming pay. He was at the time, and had been for years, engaged in making experiments in agriculture. Had he known less of farming, he would not have been so modest.

Whenever a man talks flippantly of the great pleasure and profit of farming, of its comfort and independence, of its freedom from care and anxiety, of the great respect he has for the "honest, hard-fisted tillers of the soil," set him down as a flatterer or a fool. This matter ought to be understood, more especially as the subject of agricultural education is now attracting much attention. It will not be long before every State has its Agricultural College. We ought not to ask or expect too much from them, or we shall be disappointed. The farms connected with them cannot and will not pay.

Some time ago, I was reported as saying that we wanted young men of capital, intelligence, and enterprise, who should engage in farming with a determination to make it pay. If I said so, I spoke thoughtlessly, for it is not my idea at all. We want intelligent, educated men who love farming, and who are determined to adopt it as the business of their lives, and who shall follow it with all the skill and science and energy they can command. A manufacturer who should engage in making woollen goods with a determination to make it pay, would probably soon furnish nothing but shoddy. A grocer whose only object was profit would be tempted to give us more peas than coffee. And the young man who engages in farming, determined to make it pay, will probably skin his land, or advertise "Japan Spring Wheat that will yield 60 bushels per acre," or go into the chicken business, or sell grades for thorough-

breeds. Ordinary farming is too slow a business for such a man. He would soon be driving round with every patent-right man who visited the neighborhood, and would wind up as a second class politician or a horse jockey.

All the eminent farmers I have ever known or read of have been men who were willing to wait. Jonas Webb began farming in 1822, when he was 26 years old. He immediately commenced improving his flock of sheep by selecting and purchasing the best he could find; but it was not until 1840 that he took his first prize at the Royal Fair. For eighteen years he worked quietly and patiently, but energetically and hopefully. Had he been "determined to make farming pay," we should never have heard of Jonas Webb. He aimed at improving his farm and improving his stock, and in the end honors and wealth flowed in upon him freely.

I am inclined to think the root of all roots for this climate is the Parsnip. It can be sown earlier than any other, and is thus in full possession of the soil before the usual period of dronthe, and suffers but little. The crop requires far less labor in weeding than the carrot. Sow in rows two feet apart, and use the cultivator between the rows. If the land is ridged, and the seed drilled in on the ridges, it will greatly lessen the labor of hoeing and weeding. And indeed this is true of all root crops. But the trouble is that our machines for drilling in the seed are ill adapted for the operation. We need a good double-mould board plow for making the ridges, and a drill that will sow two rows at a time, with a roller in front to press down the ridges, and a lighter one behind to cover the seed. The horse walks between the ridges, and the operation of sowing is mere child's play. This is the way turnips are raised in England. As soon as the plants are up, a light cultivator is run between the rows, and as the plants are on ridges there is no danger of smothering them. Parsnips are twice as nutritious as rutabagas, and three times as nutritious as ordinary turnips; and the importance of this fact will be appreciated when we consider how much labor it is to handle a heavy crop of roots. I have known a crop of late sown white turnips to contain only 6 per cent. of dry matter; and our popular varieties of rutabagas, such as Skirving's Improved Purple-top, contain only 10 per cent; Mangold wurzel contain from 12 to 14 per cent; Carrots, from 12 to 15 per cent; Parsnips, 18 per cent. And the dry matter of the parsnip is said to be more nutritious than any other root. So that if parsnips are preserved in the cellar like other roots, half as much space as is required by other roots will hold an equal amount of nutriment. But this is not all. Parsnips can be left in the ground all winter without injury; or, if dug in the fall, can be thrown into a pit, and covered with a little straw, and they will keep perfectly well. So, at least, an experienced grower assures me. For these reasons I believe the Parsnip will prove to be the great root crop of American farmers. The seed is easily raised, and farmers should grow their own, or be careful from whom they purchase, as old seed will seldom grow. Two pounds is sufficient for an acre, but it is best to sow three or four pounds unless you are sure that it is good. It is not expensive, the growers in this section seldom getting more than 40 cents per pound for it.

"Why have you such a special spite against hen manure?" asks a friend. Simply because people make so much fuss about it. There is even now a statement going the rounds of the

papers to the effect that 100 pounds of hen manure is worth more than a ton of horse dung, and twice as much as guano. Now, if you feed hens on meat, you will doubtless get rich manure. But farmers' fowls, as usually managed, are fed very little flesh meat. In the winter, they are able to pick up but little animal matter in any form, and it is at this period that we get the most droppings. From what I know of the way in which most fowls are fed in the country, I would rather have a ton of good Peruvian guano than five tons of hen manure, even after it had been pounded and sifted, and worked over in the most orthodox manner. "What would I do with it?" Use it as we do other manures. Throw it into the manure cellar, or put into the manure pile, or compost it with muck, leaves, etc., for the garden.

The Cultivation of Barley.

Barley is excellent food for horses and for pigs. The Arabs seldom feed their horses any other grain, and barley meal is the favorite English food for fattening hogs. In this country it cannot compete with the oat crop for the former purpose, nor with the corn crop for the latter. When it brings a low price, however, it is well to recollect that it is a capital food for almost all kinds of stock, and can be fed out on the farm with advantage. As a general rule, however, it commands a higher price from the maltsters than it is worth for food. The price, however, is subject to greater fluctuations than that of almost any other crop we raise. There is no export demand for it, except at low rates, and a large crop knocks down prices to a point below the cost of production. There is no outlet for the surplus. This is owing to the fact that the quality of our barley does not come up to the standard of foreign maltsters. They will not buy it at any price, and when exported it is used for food or for distilling purposes. At present prices, however, it is a highly profitable crop to raise on land that gives a good yield.

Spring barley requires richer and better prepared land than winter wheat. It is useless to hope for a good paying crop on land that needs draining, or that is poor, or that is full of weeds. It must have good culture. Oats do well on sod land; barley, seldom or never. It generally follows corn or potatoes. It should be sown early in the spring, and there is consequently no chance to manure it. The manure must be used on the previous crops. Artificial manures, such as equal parts of guano and superphosphate, would probably pay as well on barley as on any other farm crop. Sow them broadcast, at the rate of 300 pounds per acre, and harrow in before drilling the seed. At the present price of barley, their application on well-prepared land would be highly profitable. As barley is generally followed by winter wheat, special efforts should be made either to have the land highly enriched for the previous crop of corn or potatoes, or some such manures as the above must be used, or the wheat must receive a dressing of well-rotted manure.

If your land is not dry, mellow, clean, and in good heart, do not sow it to barley. It is a waste of seed and time to sow it on wet, cold, lumpy, weedy, poor land. It costs more to harvest a poor crop of barley on cloddy land than it is worth. Oats will do better than barley, but the best thing to be done under such circumstances is to summer fallow, or to plant the land again to corn or beans, and cultivate thoroughly. There were hundreds of acres of

barley last year that could not be cut with the reaper, because it was so short that the machine could not be put down low enough to reach it!

On light, warm, sandy soil, that is not liable to bake, barley should be sown as early as the land can be got into a fit condition. When sown early, such land, if *very rich*, will produce splendid barley. On heavy, clayey loams it is thought best not to be in any hurry about sowing before the first week in May, unless the land happens to be in splendid order. We are inclined to think that, provided the soil is dry and rich, the earlier barley can be sown the better. Two bushels of seed per acre is considered sufficient, but we prefer $2\frac{1}{2}$ bushels, broadcast, and $2\frac{1}{2}$ bushels, if sown with a drill.

It is usual to roll the land when the barley is fairly out of the ground. The rolling, of course, can be done at the time of sowing, but it is frequently quite a convenience to be able to postpone the operation for ten days or two weeks. The land is drier, we have more leisure, and the work can be all done at once.

In harvesting, the crop is cut with a reaper, and it is better to bind it into sheaves. But it often happens that other work is so pressing that it is left loose in the bunches as thrown off from the machine. The bunches should be turned in the course of a few hours, and great care should be taken to prevent the crop from being stained by the weather. A bright sample will command from 5 cents to 15 cents per bushel more than one stained by the weather, or discolored by heating too much in the mow or stack. If it should so happen that the crop heats in the mow, do not thrash it till it has done "sweating," and it will not be injured.

A Simple and Good Corn Crib.

Mr. Francis Collins, of Bucks Co., Pa., sends the *American Agriculturist* a very accurate description of his corn crib, with his reasons for building it as he did. If not taken as a model, nevertheless, the description may be very useful as a guide to farmers in constructing similar buildings of varying capacity. Mr. C. writes:

"I have never known any corn crib that combined so many good points. It is of good size and durability, very easily filled and emptied, perfectly rat-proof, and we have never known

posts, 7 on a side. These posts are of excellent red cedar and locust, about 7 inches in diameter, set in the ground $2\frac{1}{2}$ feet, and resting on flat stones. They should reach at least 20 inches above the ground, which is high enough to prevent rats from jumping up, and getting into the crib. The tops of the posts should have old tin milk-pans inverted over them, (as shown in the engraving,) for mice climb a vertical piece of tin. The sills are fastened to the corner posts by thick and long wooden pins, to prevent the crib being blown over. The best position for a crib is north and south, so that the westerly winds may have a good chance at it, and it must stand clear from all other buildings. The cross-sills, or joists, are let into the sills every 3 feet, and are of oak, 5 by 6 inches. The end posts, middle posts, and two other posts which are equidistant from the end and middle

posts, are 5 by 5 inches, and should be of a durable and hard wood; mine are of heart-pine. The other posts are of hemlock, 3 by 5 inches, and 2 feet from centre to centre. The corner and middle posts are braced. There are five cross-ties, (two of these are at the ends,) which are tenoned, and *keyed* to the larger posts, just below the plates. The plates are 4 by 7 inches, put on flat-wise for greater strength. The roof should be of white pine shingles, with three sliding doors. When the crib is nearly filled, the sliding doors are pushed up as far as needed for shovelling in the corn, and are held in their places by the shingles, which overlap the edges of the door about $1\frac{1}{2}$ inches. When they are pulled down, there is a batten on the inside of the door which just allows the bottom of it to come in line with the eaves.

The sides of the crib are covered with oak-lath, 2 inches wide, and with spaces between sufficiently narrow to keep in the thinnest ears, a board to face the sills, and another narrow one to run 4 inches up the side. The ends of the crib are covered with boards, and have a

large door in each. After the laths are nailed on the sides, small doors or windows, about 20 inches square, are sawed out of the laths, and the sawed pieces are fastened with wrought nails to cross-pieces; so that when the door is put in, the tops of the cross-pieces go inside of the first slat above the opening, then the door drops down an inch or two, and the bottoms of the cross-pieces go inside of the first slat below the opening.

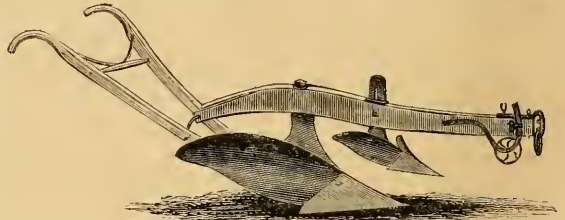
Thus we have a cheap, easily made door, easily taken out, and, when in, hardly to be distinguished from the adjoining parts. I have eight of these doors, four of them close under the eaves, and four a little lower, for easy shovelling.

When filling, nail loosely pieces of board inside of the door-posts, at the end of the crib, so that the corn cannot press against the door.

When emptying the crib, use the side-doors as soon as it is possible to shovel the corn through them into a wagon. The crib will hold about 900 bushels of shelled corn when it is well filled.

Plowing for Corn and Potatoes.

There is little doubt that potatoes, as a rule, do best now a days on fall-plowed sward. The decaying sod affords organic manure enough on most soils, though if the land is dry, sandy, or gravelly, and this crop is not especially subject to rot upon it, a moderate dressing of barn-yard



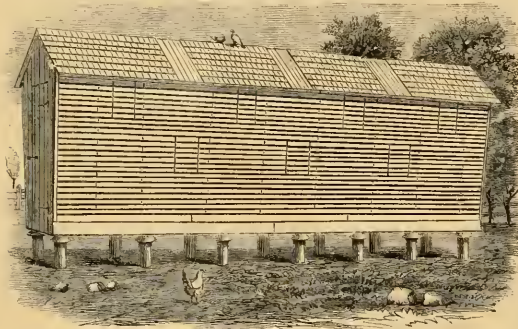
THE MICHIGAN FLOW.

manure, or a good muck compost applied early in the spring, is often very useful. If, however, the sward is a close one, we would apply, say, 50 bushels of lime to the acre in the spring, half before and half after plowing. Wire-worms are often a great annoyance on an old sward, and when their presence is suspected, we advise the use of lime slaked with brine, not as an absolute prevention of danger from worms, but as an important check, being death to many of them.

Potatoes are often planted on spring-plowed sod with good success, and on light soils corn does best so treated. When this is done, there is seldom opportunity to cross-plow and knock the sods to pieces. If it is attempted, the crop is put in very late, in order to give the sods a chance to rot before cross-plowing, and the weeds and grass will probably prove masters of the situation. If the soil is thin, use a flat furrow plow, and invert the sod as perfectly as possible. If there is a sufficient depth of soil to warrant plowing eight inches deep, by far the best plow to use is the Double Michigan, or "sod and subsoil" plow, which is simply a large plow with a small plow, called a skimmer, placed on the beam in place of a coulter. The operation of this plow was shown by an engraving in the *American Agriculturist* for May, 1865.

The little plow folds half the sod slice upon the other half, and the big plow turns it into the furrow and covers it with mellow loam. The engraving gives a good idea of one of these plows. They are made of all the favorite forms, and any clever smith can adapt a "skimmer" to a common plow. The share of the little plow should always cut as wide as the plow can turn, and the wing of the mould-board should extend out wide enough to lay the half-slice of sod flat over upon the uncut portion. When manure is plowed under with the plow, it is of advantage to have boys follow behind the plow and haul the manure from the next slice into the bottom of the furrow. This leaves the manure in part upon the sod and in part upon the bottom of the furrow. When manure is turned under in plowing, lime should be applied, if at all, upon the plowed surface. The Michigan plow usually leaves the ground fit for planting.

THE PRICE OF HORSES.—The difficulties attending efforts to report the horse market of



CORN CRIB.

it to fail to keep corn perfectly. It has been built nearly twenty-five years, has had little or no repairs put upon it, and looks like standing twenty-five years more without needing any. It is 40 feet long, 5 feet wide at the sills, and 7 feet wide at the plates, with posts 7 feet 10 inches, from top of sill to top of plate. The sills are of white oak, 6 by 7 inches, set upon 14

New York are such as to lead those who attempt it to specify only in the most general terms the condition of the market, that is, the supply and demand, as nearly as it can be estimated, and besides, notable transactions that can be reliably ascertained. Each horse, or pair of horses, is generally sold by a special bargain—the dealer getting all he can, and the buyer paying the least possible; each exercising his wits to secure his own interest, without reference to market price or to anything except his own necessities. The street car and omnibus companies usually limit those who purchase for them to a price which they must not exceed; hence for the class of horses which they require there is a sort of standard of prices, which fluctuates but little. However, these horses are quietly picked up in different parts of the country; but while comparatively few are bought in the city, a good many, which are found to be unserviceable, are sold here. In this way the city has its full share of halt, broken-winded, and vicious beasts.

Watering and Feeding Troughs for Sheep or Hogs.

Sheep and hogs will put their feet into the troughs if they can. They will even stand and lie in them and defile them in every possible way. This may be prevented by various means, but we think no one has suggested a simpler remedy than Mr. Jacob Nixon, of Van Buren Co., Iowa, who sends us a sketch and description of an appliance he has put upon his troughs, which is seen in the accompanying engraving. Neither hog nor sheep can feed from such a trough with both fore feet in at once, and it would be difficult for any but a very young animal to stand or lie in the trough. The improvement consists of a board set up edgewise, lengthwise over the middle of the trough, kept in place by standards at the ends, and a brace,



WATERING AND FEEDING TROUGH.

if necessary, in the middle. The trough, *H*, is represented as 10 inches high and 20 inches wide; the standards, *I*, *J*, are inch boards, 4 inches wide, and the board, *K*, over the trough is of inch stuff 8 inches wide. If the trough is more than 10 feet long, a brace, *K*, is needed; otherwise not. This contrivance is equally applicable to log (dug out) or plank troughs.

USE OF STRAW FOR FODDER.—Dr. C. A. Cameron of Ireland recommends the use of straw for fodder. Out straw contains from 3 to 4 per cent. of flesh-forming principles and about 12 per cent. of gum, sugar, and other fat-forming matters. Wheat and barley straw are not quite so valuable. He recommends that the straw should be either cooked or fermented before being used, as in either case the constituents are far more digestible than when the straw is merely cut or reduced to chaff. When hay is

scarce the straw chaffed may be substituted for it, increasing the quantity of meal or roots in the fodder. Straw should not be fed alone.

Turkeys—Success in Raising.

Comparatively few people have uniformly good luck in raising turkeys. Those whose flock numbers perhaps hundreds one season will count but a bare score or two another. When the old birds are watched, shut up, and made to sit where they can be controlled, and the young receive great care from the first, they seem to do no better and often not so well as when the old turkey steals her nest in the woods and brings her young home only when she finds it hard to provide food for them. Young turkeys seem to die for no good reason. Some of the readers of the *Agriculturist* report their dying at the rate of 20 or 30 a day. The gapes destroys many, and a slight cold, apparently, is frequently the cause of whole broods dying. The lack of proper food is also, no doubt, a prolific cause of disaster. One of the best suggestions we have lately seen is the recommendation to use an empty hay bay for early chickens, locating the coops in different corners. This would be just the place for young turkeys, provided they could have grass, finely chopped roots, or similar vegetable food. Such a place is, however, greatly exposed to depredations of rats, and these are great foes of young poultry of all kinds.

The food of all young animals is of an animal nature. In the earliest period of the existence of young birds, it consists of the yolk of the egg. On this they live before and for some time after they leave the shell. Turkeys and chickens are never hungry when first hatched, and may go at least two days unfed without harm. This is because a portion of the yolk of the egg remains in the digestive organs, to serve as food until they get familiar with the world and some of its responsibilities and cares. The gizzard is not yet in order to grind up hard grains like flint corn, simply cracked, or in the shape of coarse meal. The instincts of the mother bird are a tolerably good guide to the kind of food adapted to her young. Throw her some grain, or Indian meal wet up, and she will consume it with the greatest greediness herself; give, on the contrary, a soft worm or grub, and she will call her young to get it, and pick it to pieces for them. Hard boiled egg, mashed, and boiled liver, also mashed fine, are adapted to their easy digestion, and should be fed to them for the first few days at least, together with bread crumbs, fine Indian meal mush (cooked), and if they are not upon the ground, some clean, sharp sand.

Another excellent suggestion in regard to turkeys is made by Mr. J. A. Richardson, of Kane Co., Ill., who writes that they seldom lose a turkey, except by accident, if each brood is treated as follows: "We make a tight pen 12 feet square, and 16 inches high, of boards, and in this we place the young turkeys when first hatched, and let them remain until they are able to fly out. On one side of the pen we make a shelter of boards, to protect them from the sun and from the rains. We feed during the first week with boiled egg chopped fine, and good

wheat bread, in about equal quantities. The second week we give curd made by heating sour milk, and bread made of wheat shorts, or coarse flour. When three weeks old we give them dandelions chopped fine and mixed with their food. Up to this time we feed six times a day at regular intervals, and always furnish plenty of fresh water. When seven or eight weeks old wheat makes excellent feed. We use screenings or small wheat. The old turkey will not leave the young; consequently she is not confined."

A Check for Cribbers.

There have been all sorts of contrivances used to prevent cribbing horses exercising their "wind-sucking" propensity. It is doubtless well known to most of our readers what this propensity or habit is, but to explain it to all we introduce an engraving, figure 1,

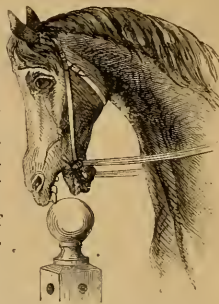


Fig. 1.—HORSE CRIBBING.

showing the head of a horse in the act of "sucking wind," or cribbing. The upper teeth are rested upon the top of his manger, a post, or any firm support; then bending the neck slightly, pressing downward and backward with the teeth, the horse expels spasmodically a portion of wind from the stomach. This is constantly practiced by confirmed cribbers so long as they stand near any convenient rest for their teeth. It is not regarded as a constitutional unsoundness, neither is it a disease, though cribbers are generally hard to keep in good condition. Both by veterinarians and by the courts it has been held to be a bad habit, but not a vice. It is supposed to arise from indigestion, causing an accumulation of wind in the stomach,—something akin to dyspepsia,—which is relieved in a measure by the eructation of air. This is always difficult for the horse to do, hence the marked effort always made when it is accomplished in this way.

Among the devices to prevent cribbing are an iron muzzle for use in the stable, which permits eating but prevents cribbing, a tight throat-latch, hitching between two posts by a rein going to each, the removal of mangers and cribs altogether from the stables, and feeding in tubs, or boxes, or on the floor. We were struck with the novelty and simplicity, as well as the perfect efficiency, of the device shown in fig. 2. It is the invention of Mr. Edward Dough-

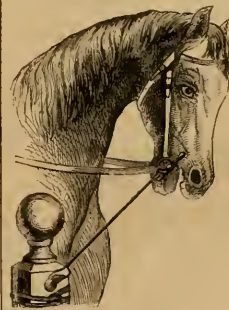


Fig. 2.—HITCHING REIN.

ty, of Palsades, N. Y., who permits us to describe it for the benefit of all who have cribbing horses. It consists of a light rod of iron about two feet long, in one end of which is an eye set at right angles to the rod, to receive the hitching rein

and at the other end is a spring or snap-hook, to hook into the ring of the bit. With this a horse may be hitched to a post and will find it impossible to get his teeth upon it. The removal of the manger is the best way to prevent cribbing in the stable. The habit may probably be broken up, for a time at least, by an abundance of good food, good ventilation, and careful grooming, in connection with some efficient means of totally preventing its exercise both in the stable and out.

The Cultivation of Sorghum.

The past year was a very unfortunate one for sorghum growers. Confidence in the crop is seriously shaken, and the future is unpropitious for the makers of sorghum evaporators. Naturally enough, we have repeated inquiries as to whether we cannot or will not say an encouraging word to the farmers about planting sorghum. This word we are very willing to say. In fact, a crop which has for at least ten years excited so much interest that the cultivation of it has grown from nothing, in 1856, to 35,000,000 gallons, in 1866, would hardly, under any circumstances, be condemned for a failure no worse than that made by Indian corn or by potatoes.

We believe thoroughly in the crop, both for the North and South, East and West. The failure of the crop of '67 was not so much the fault of the plant as due to the fears of its cultivators, who had not the courage to plant as extensively as usual in an unfavorable or unpromising season.

Year before last we raised north of Mason's and Dixon's line one-tenth of the whole amount of syrup and molasses consumed; last year the product fell to between 6,000,000 and 10,000,000 gallons. The syrup now is scarce and high—in fact, but very little is in market, and people are willing to pay \$1.00 to \$1.25 per gallon for it, if well made. The processes for evaporating and purifying the syrup have been greatly improved since 1866, and it is not too much to say that the crop of the present year will far surpass in quality that of any previous one. For ourselves, we anticipate that it will be so good as to very easily supplant molasses with those who have hitherto refused to use it on account of its peculiar flavor. We cannot see any reason why all who cultivate sorghum this year with proper care, if they have good facilities for evaporating it, may not expect as profitable a crop as ever. It is not possible for enough to be planted seriously to affect the market.

We advise extensive planting, provided reliable seed can be obtained, and it can be put upon warm, generous corn ground. The soil must be well pulverized, mellow, and in good heart from recent manuring. It does well on fall-plowed soil. Give plaster, lime, or ashes, in the hill after the seed comes up, and keep clear of weeds. In regard to the variety of seed to plant, we can only say, that when sorghum growers and sorghum conventions disagree so essentially, we can only refer our readers to good growers or good seedsmen in their own sections of country for the best advice.

Deep Plowing—Safe and Unsafe.

"Do not, Mr. Editor, advise deep plowing—many a crop has been ruined by it." "By deep plowing a farmer doubles the size of his farm." "You have another farm lying six inches under the one you now till; only run the plow down into it." We have no hesitation in advising the gradual deepening of all soils that are retentive of manure, or that are inherently

fertile, and the fertility of which can be depended upon or kept up for a number of years. Thin soils, and those which do not hold manure, and are adapted chiefly to grain and grasses, need shallow culture, or such a system as will radically change their character, such as turning under crop after crop of green manure until the soil is full of vegetable matter. Clayey loams devoid of vegetable mold below a few inches, are often underlain by what is known in the vulgar as *galler dirt*. It is dangerous to take up more than an inch or so of this untillied soil at each plowing, as it often contains salts of iron or other substances deleterious to vegetation. In general, however, even if a crop be injured, in the long run the deeper plowing, accompanied by good tillage, will be a great benefit. The greater portion of the Western prairies are of a character to be benefited by deep plowing. They even ought to be broken up by putting the plow down as deep as possible. We have held on to a letter from a Missouri correspondent, writing from near Hannibal, for some months, in order that, presenting it just at plowing time, it would do the greater good. He writes:

"In this section of our country we have passed through a severe drought. Our crops of oats, wheat, and hay, are the best we have harvested for many years, but our corn and potatoes have come nearer to being a complete failure than they have done here within the memory of the oldest settler. This season has not been without its lessons. Some farmers have learned a good lesson, and will profit by their experience, but more will not even learn at the fool's dear school, but follow in the same old way, and fail as before. Such seasons as the past show who are the good farmers. In looking around we saw here and there, few and far between, in the midst of general failure, a good crop of corn. Ask the reason. 'Why, sir, we plowed for our corn; no surface scratching, but with three good horses abreast, and the plow in up to the beam. We turned the weed seeds under so deep they gave us no trouble, and this deep bed of loose soil has retained moisture enough to mature a good crop without rain; that is the secret.' 'What is the cause of the difference between different parts of that field of wheat over there?' 'It is all in the plowing, sir. Twelve acres of that field were plowed in the common way, and six acres, joining in the same field, were plowed as deep as three horses could plow it. As a result, the six acres yielded as much as the twelve acres did, lacking three bushels.' It is deep plowing we need to insure our crops against drought. We have an abundance of rain in winter and spring to last our crops all summer, if we had some way of saving it; and the best way now is by deep plowing and subsoiling."

The Castor Oil Bean.

This plant is of tropical origin, and has about the same range of climate in which it may be profitably cultivated as the sweet potato. It is grown to a considerable extent in the southern half of Illinois, but the largest yield is in the extreme southern counties, showing that it needs a hot sun and a long season to give the largest amount of oil. The whole treatment of the plant up to harvest is much like that of Indian corn. The plants should not stand nearer than four feet, and the best cultivators place the rows seven feet each way. The plant is a rank grower, and wants plenty of food and sunlight. The Florida beans are considered better than the Spanish for producing oil. Two beans are usu-

ally planted in a hill, but one should be taken out when the plants are six inches high. The cultivation may all be done by horse-power, but care should be taken not to wound the stalks or break off any of the limbs. Cultivating five or six times is none too much to secure the best results. The proper time for planting in southern Illinois is about the 1st of May, and by the middle of August some of the stalks will be fit to cut. This should be done when the bottoms of the spikes yielding the beans begin to turn brown and crack open. It pays to have a drying house for the curing of the beans, and a plan of one is given in the *May Agriculturist*, 1867. Drying yards are discarded by skillful cultivators. This crop is usually planted upon the poorest land, and is thought by some to improve it quite as much as clover. The average yield under fair treatment is about twenty bushels to the acre. The price of the beans varies much more than that of ordinary farm crops. During the past year the price has ranged from \$3.90 to \$1.25 per bushel, in the St. Louis market, where most of the oil used in this country is manufactured. We have no doubt that our California correspondent can raise the beans in that State, but do not think the crop will be more profitable than many others he might grow. Previous to the war it was so largely raised in Southern Illinois that it ceased to pay on account of over-production. The war caused a great advance in the price of the oil, and the cultivation is now increasing. An acre of the beans, or twenty bushels, will yield about 69 gallons of oil, worth at present prices about \$150. Those who raise the beans think the manufacturing pays much better than the cultivation. Possibly the farmers who raise this crop could form a joint-stock company and press the oil out of their own beans to advantage. We believe the business of pressing the oil in this country has been almost a monopoly, and that one man has made a large fortune by it.

Lancaster Co., Pa.—Rotation of Crops.

A correspondent, using the signature "Pequen," gives so clear a statement of the mode of farming pursued in the fertile valleys of the Conestoga and other rivers of Lancaster County, that we present his letter, slightly abbreviated.

"As an agricultural district, Lancaster County has always held high rank; at this time, its produce is double what it was fifty years ago. At no time has it advanced more rapidly than it is doing at present, and there is room for further increase of its agricultural productions. Commercial fertilizers, except lime, are not yet generally used. Farmers are, however, alive to the importance of husbanding their means for making barn-yard manure. Very few of our farmers will sell straw, however abundant it may be, and many will not sell hay under any circumstances.

"Rotation in crops is a universal practice, but not quite that which you designate in the article on page 57, (February No.). Lime is very generally used, and as you say, put on the sod, and then plowed down, or else spread on the surface after plowing,—generally the latter. The first spring, corn is planted; the second season, either oats or wheat; the third, wheat again, seeding with timothy or clover; fourth and fifth seasons, grass; then corn again, and the old routine over. It is a very rare thing to see the land lie fallow the second year. It is too high in price to lose a crop. If it is designed to have a crop of wheat the second year, the corn is cut off in September, about 2 or 2½ feet

from the ground, and shocked in rows, so as to leave spaces 20 to 30 rows wide. A harrow or heavy roller is passed over these stubs in the direction in which it is designed to run the plow, so as to break them down and favor their being well covered by the plow. After plowing, the roller is again passed over, and the wheat is then drilled in. They usually make it a point to drill in the wheat before the plowed ground gets rain. Neat and experienced farmers do this so nicely, as to leave very few corn stubs on the surface. The corn is left standing in the shock until it is sufficiently dry to harvest and house, when it is husked, and, with the fodder, hauled from the ground. After this crop is taken off, the ground is well manured, and plowed as early after harvest as circumstances will permit, and again seeded in wheat, with which it is set to grass. The liming is not often repeated under 12 or 15 years. Sowing wheat upon corn ground in the manner described is a very general and successful practice; from 20 to 25 and even 30 and more bushels of wheat to the acre are yielded. Where land is in good condition, it is thought to pay much better than oats, as in strong land they are apt to fall, and be light in the head or grain. Some very good farmers let their grass fields lie but one year before turning them over; but generally they are left two, though rarely more. Some farmers put in two crops of corn in succession, manuring the ground well before putting in the second crop, and then follow with wheat, as above stated. Some put a coat of manure on the sod before turning it down for corn. This secures a good crop of wheat after the corn, but if another coat is not given with the second crop of wheat, the grass will not be so heavy. I know a farmer who put a moderate coat of manure on the sod, turned it down, and planted in corn, seeded in wheat in the fall, and next summer put a moderate coat on the stubbles; plowed and sowed wheat again, seeding to timothy and clover, and left the land two years in grass. The farm was divided into five fields, which gave him one for corn, two for wheat, and two for grass, and brought them round in regular order. His wheat was almost invariably good, yielding from 25 to over 30 bushels per acre. Judging from the success and prosperity of our farmers, I think there are few places which excel us, and many which might profitably follow our example. There are many sections where the soil is rich and strong, which I believe would profitably bear the system of culture we practice. Forty to fifty bushels of corn to the acre is a moderate crop on our best land; seventy to eighty is good, and is sometimes exceeded."

Subsoiling—A Defense Against Drouth.

The theory of subsoil plowing has been frequently explained in the *Agriculturist*, and the practice has been advocated for the last quarter of a century. Nevertheless, the use of a subsoil plow is a rarity on American farms, and almost always marks a really progressive farmer. The action of a mole near the surface represents tolerably well the manner in which a subsoil plow works, only at such a depth that little or no elevation of the top soil is visible, while more ground is moved in proportion. These plows are usually employed following in the furrow of a common plow, and driven as deep as the team is capable of drawing them. Crops upon land thus prepared are much more likely to send their roots deeply, to gain more nutriment, to sustain themselves during drouth, and to mature heavier crops, than where subsoiling is

not practiced. Indeed, the only circumstances under which a subsoil plow does not work to the advantage of the crops, is on very light, thin, leachy land, and where the water stands within a few inches of the surface. For corn, potatoes, and roots, this preparation is expedient, and for the latter class of crops especially so. Subsoil plows are of steel and cast iron, and are of either the lifting or mole patterns. The lifting subsoil plows may have a wing (which takes the place of a mould-board in common plows) on one or on both sides of the standard. There is a great diversity of sizes, from the admirable little one-horse plows, used to run between the rows of root crops and potatoes after the ground has been compacted by the horse hoe or cultivator, to those requiring a team of three or four horses to draw them. There is not a crop which the subsoil plow may not greatly benefit, either in the preparation of the soil or in the summer culture.

Grubs and Their Work.

Those insects which in their grub state live underground are among the most annoying to the cultivator. Their presence is not suspected until their mischief is done, and the task of attacking them in their concealment is a difficult one. The grubs greedily devour the roots of plants and do not seem to be particular as to the variety; they are equally destructive in the vegetable and fruit garden, and nursery, as in the meadows and fields. Strawberry and raspberry plants suffer much from their attacks, and the annual loss in young nursery trees may be estimated at thousands of dollars. The most common of these destructive grubs is that known as the



Fig. 1.

White Grub, the larva of the common May-bug, (*Lachnosterna fusca*), the brown beetle so common in the first warm days of spring. This beetle (fig. 1) is destructive in its perfect state and feeds on foliage and flowers. The beetles are very lively during the evening, but are quiet towards morning, and gather in the trees, from which they may be shaken upon sheets and collected in large numbers. They must be captured very early, as they fall to the ground about daybreak and conceal themselves in the grass. The female lays her eggs in the ground, and the larva, which lives for several years, attains the size of the little finger. Its body is soft and white, with six legs; the head is hard and horn-like, and of a light mahogany color. When found, the body of the grub is curled up in a semicircular form, as shown in figure 2. Probably the grubs of a number of species are equally mischievous, though that of the Muck-worm, which is so often found in manure heaps, and is in general appearance like the White Grub, is said to live on decaying vegetable matter only, and is comparatively harmless. The grub of the Muck-worm is lead-colored throughout, from the contents of the intestines showing through the semi-transparent body, while that of the White Grub shows the lead color only near the tail. Cut-worms, also very destructive, are the larvae of moths and not of beetles, and differ altogether in their habits. The larva of the Tumble-bug (*Cauton taris*), which has not formerly been classed among the

injurious insects, is probably as bad as the rest. It is the common impression that the grub of the Tumble-bug feeds only on manure. The balls of manure containing the eggs which the insect so industriously rolls about are buried in the ground, the manure apparently serving as delicate food for the grub while young. Margaret Chappellsmith, of New Harmony, Ind., sends us an account of her observations on this insect, from which we extract the following:

"The ball of dung made by the two Tumble-bugs contains, I think, about seventy eggs, and the amount of dung contained in the ball is a very inadequate supply of food for the number of grubs to be developed from these eggs. If dung were to be their food, why do not the parent bugs leave their ball in the heap from which they have taken the dung? Every one knows that the ball is found more frequently where there is not any dung than among dung. I have seen two Tumble-bugs roll their ball from my dung-heap down a long path, then turn up another one by the side of a strawberry-bed, then up the little elevation of the bed, and then make the hole into which they dropped the ball, by the side of a strawberry plant. I have seen another pair of these bugs come in another direction, down one path from the dung-heap, then down another long path, then up a little bank to a rhubarb plant, and there, by its crown, make the hole for their ball. They do this without hesitation, having evidently fixed on the feeding ground for their young beforehand. I kill the bugs and burn their balls.

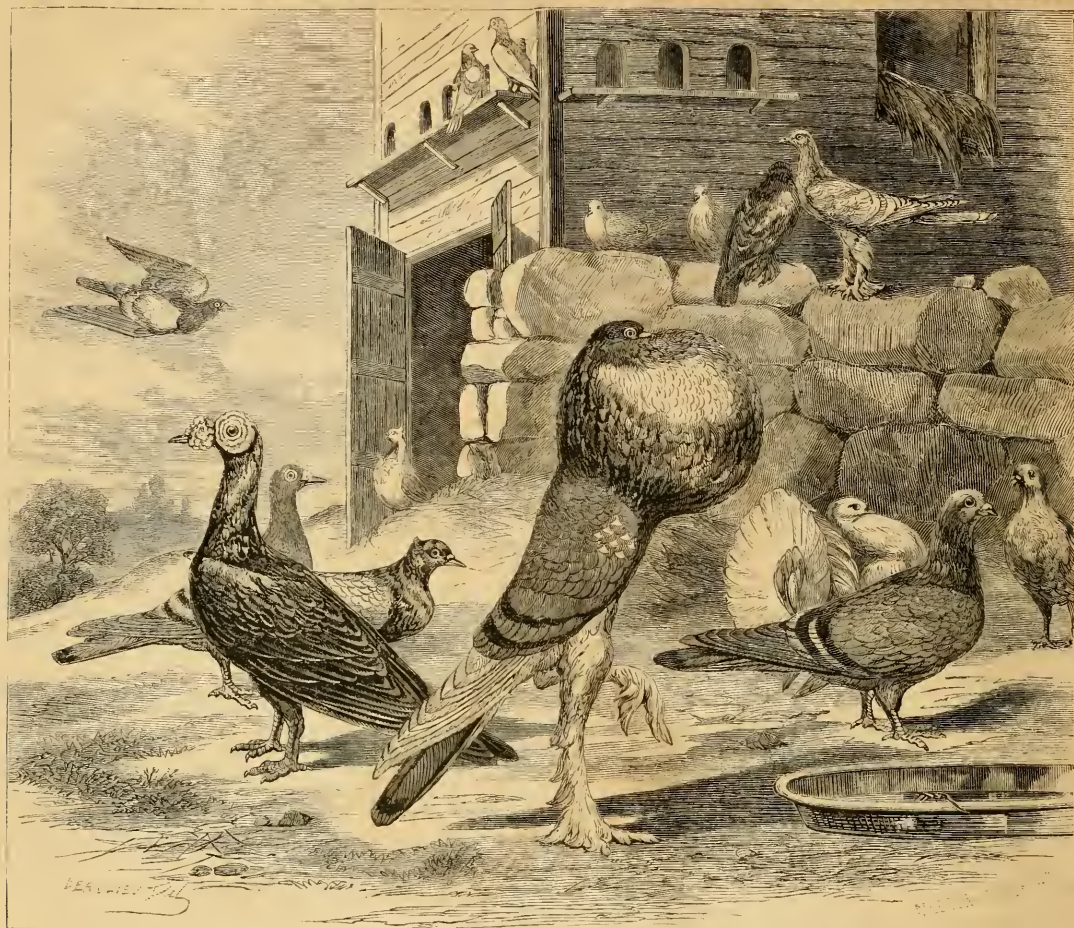
"I dig for the eggs of the June Bug. This creature makes holes in the earth, and at about one foot down it deposits its eggs, each egg separated from the rest by earth. I dig up a spadeful of earth, and if I find one egg, I search until I have found at least thirty; but I have found above sixty in one hole. In last July and August I dug up about 1,400 of these eggs; and might have found many more but for the dry state of the earth. They are hatched in a very short time, and then are not so easily found.

"In the Semi-Weekly Tribune of Feb. 27, the idea is indirectly conveyed, that the frost in this country kills the grubs. This will not be believed by any one who has much knowledge on the subject. Nor would any one believe it who reflects on the variety of insects that, above ground, survive frosts which here vary from about zero to twenty-one degrees below it; as, for instance, do squash bugs, and the chrysalids of moths and butterflies which hang from trees, window sills, and fences. The grubs are protected by the earth, and by that which lies on the earth; and many of them abide in cold weather, when undergoing their transformation, at a depth of two feet below the surface."

The larva of the beautiful Gold-bug or Goldsmith beetle, must be included among the injurious grubs. The many who have written us for directions to destroy the grubs will see that the work must be a slow one, and that there is no specific to be recommended. Kill the insects in every stage, whether of beetle, larva, or egg. The catching of the beetles has already been referred to, as the destruction of one female prevents the production of many grubs. Whenever a grub is turned up in working the soil it should be destroyed. When a strawberry or other plant suddenly wilts, dig down and find the grub. Encourage fowls to follow the plow, and in meadows that are badly infested, turn in hogs and let them root. In France, considerable reliance is placed upon the hedgehog as an aid in destroying a similar, but different grub.



Fig. 2.



HOMING BIRD.

DRAGON.

SUABIAN.

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POUTER.

FAN-TAIL.

ISABEL.

ANTWERP.

OWL.

GROUP OF FANCY PIGEONS. — Drawn and Engraved for the American Agriculturist.

In all civilized countries from India to China, through Asia and Europe to America, people are familiar with the common Pigeon or Dove in some of its many varieties, or breeds, which, when bred without care, or allowed to mingle, soon revert to a form in many respects much like the wild Rock Pigeon of the Eastern Hemisphere, from which they are all descended. The Rock Pigeon is one of the most easily domesticated of birds. Young ones taken from the nest and reared by hand seem to have no inclination to return to their wild habits. The result has been, that, wherever the wild bird is found, the inhabitants have always, so far as we know, had tame pigeons. In a state of domestication, peculiarities of form and plumage have been observed, and expressly propagated, so that there is hardly a doubt, that through the selection made by pigeon breeders for hundreds or thousands of years, many of the most peculiar and beautiful of the varieties have been formed. In the above striking engraving we present a group of a few very marked examples of variation in form and plumage exhibited in some of the most highly prized breeds of pigeons. The figure occupying the centre of the group is the English Pouter. All pigeons have the

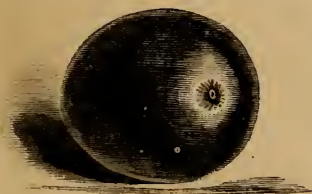
faculty of inflating their throats, in a measure, but the Pouter inflates its entire crop to the extent exhibited or even more, and does this apparently for its own amusement. The desirable points in a Pouter pigeon are great length of limb and length of feather, with slenderness of body, large size and symmetry of the inflated crop, and attractiveness of color, in which great variation is allowable. These Pouters are very large pigeons, but other kinds are of less size; in fact, a breed of Pigmy Pouters is highly prized. The Isabells, one of which is seen on the wall, panted like a Miss of ten years, are a continental variety, of a fawn, or pale reddish yellow color. The conspicuous black bird with the enormous mass of carunculated flesh about the eye and upon the beak is the English Carrier—a large, strong-bodied, long-winged, beautiful-plumaged bird, whose merit in the eye of the fancier is the size and perfection of the deformities upon his head, called the eye-wattle and the beak-wattle. The beak is very long, and the colors are white, black, dark dun and blue. This bird is not used as a letter carrier, as might be supposed, though originally it might have been so employed, for it doubtless possesses great sagacity and a strong flight. The birds

which are employed as message bearers and for flying matches are known as Homing birds, because when carried away they fly home again. Among those thus used are the Antwerps, one of which is on the right of the picture, and Dragons, represented by the bird on the left, partly hidden by the shoulders of the Carrier. The most successful match-flying birds are said to be crosses between these and some other varieties, as, for instance, Antwerps and Owls. The bird with a ruffled bosom on the extreme right is what is called an "Owl." The Suabians are a small but very beautiful German variety with gaily spangled plumage; one is introduced in the engraving but somewhat hidden by the Carrier and Dragon. There are numerous other very beautiful breeds of pigeons of well established characteristics; and the careful breeding of any of them is, like the culture of flowers, of little "practical use," but a great pleasure. The pigeon fancier, in the beginning, should not undertake to breed his favorites for profit, but for enjoyment, although there is a ready sale for fine specimens. The prices which have been paid in England for birds of extraordinary merit are astonishing—for instance, £10 to £20 for a single bird is not an unusual occurrence.

Flowering Shrubs.—The Hydrangeas.

The old Garden Hydrangea (*H. Hortensia*) is well known; its large, globular heads of flowers, usually pink, but sometimes blue, make it a conspicuous object in garden decoration. It should have shade and moisture and a rich peaty soil, to flower in perfection. The plant survives the winter in the climate of New York, though a part of the young growth is usually killed. The best way is to grow it in boxes or tubs, which can be put into the cellar in winter, or the plants can be taken up and heeled-in where they will be protected from frost.

A recently introduced Hydrangea from Japan is quite as showy as the old *Hortensia*, and perfectly hardy. It is *Hydrangea paniculata grandiflora*—a rather long name, which would translate into the equally unwieldy Large-flowered Panicle Hydrangea. It was introduced into this country directly from Japan, and is known to some of our florists as *Hydrangea deutzifolia*, a name which was given it from the resemblance of the leaves to those of the *Deutzia*, before it was ascertained that it was a variety of *H. paniculata*. The shrub grows to the height of 8 feet, and bears a great abundance of flowers, resembling in general appearance those of *H. Hortensia*, but the clusters, instead of being globular, are somewhat pyramidal, and are a foot or 18 inches long. The flowers are at first of a yellowish green; they afterwards become pure white, and finally are beautifully tinged with pale rose. We have never seen this grow as finely as it does in the grounds of Parsons & Co., Flushing, L. I., where it is justly considered one of the most valuable ornamental shrubs of recent introduction. We have figured a very small specimen, to show the shape of the leaves and flowers, as it would be impracticable to give a full-sized cluster. In the Hydrangeas the fertile flowers are small and inconspicuous, while the showy ones, those that make the plants valued as ornamental, are sterile, and have neither stamens or pistils. In the species just noticed the sterile flowers are so abundant as to completely hide the fertile ones, while in our native *H. radiata*, (*H. nivea* of the catalogues,) the showy sterile flowers form only a single row around the cluster.



THE MINER PLUM.

Native Plums—The Miner and Others.

Numerous bits of evidence point to the conclusion that the Miner Plum, about which so much has been said, is only a good specimen of the Chickasaw Plum of the West. "A subscriber," Franklin, Tenn., gives the following account of the Chickasaw. We figure the plum which came to us as the Miner, but unfortunate-

ly without leaves. "It is a native of Middle Tennessee, and has been known here as a native plum ever since the first settlement. I have seen two or three specimens growing wild in the forest, and in many respects it is the finest plum grown in our State. With its fruit grows to the size of a partridge egg, is of a deep red color, with firm, yellow pulp, and when thoroughly ripe is exceedingly well flavored, and



HYDRANGEA PANICULATA GRANDIFLORA.

will bear transportation in barrels equal to the cranberry. Our ladies esteem it most highly for the purpose of making jellies, its tartness being an objection to some as a table fruit. Some years ago Dr. S. P. Hildreth, formerly a resident of Ohio, sent back some of the fruit of this plum to his friends in Cincinnati, who were so well pleased with its keeping and transporting properties that they planted the seeds and sent to him for cuttings, etc. Ten or twelve years ago he sent large quantities of seeds and cuttings to his friends in Ohio, and I would not be surprised if in this way the fruit has become pretty generally disseminated. It is extremely hardy, and as a preserving and jelly plum has no equal with us. We have another variety called the "Wild Goose" plum and by some the "Nolen" plum, which as an edible plum excels every known variety. In size it is equal to the "Green Gage," is exceedingly juicy and sweet, almost purple in color, with a bloom like the grape, which is rubbed off by the slightest touch. For the table the "Wild Goose" excels all others, but for prunes and other purposes above detailed the Chickasaw has no equal. There is another variety of plum, called the "Wild Goose," extensively known and cultivated, but it is wholly unlike, and very much inferior to our native Wild Goose or Nolen plum." Pomologists should look after the native plums.

Shrubs for Cemeteries.

In properly arranged cemeteries there are neither fences, hedges, or any other enclosures; inconspicuous stones being used to mark the corners of the lots. In such cases the planting is all a part of one general plan, without the intrusion of individual tastes to mar its unity. Cemeteries like these are rare, and much more commonly each lot is arranged and decorated according to the views of the owner. In planting of this kind, shrubs should be chosen the expression of which is cheerful and pleasing, without presenting striking or gaudy colors. The most useful shrubs for this purpose are the low-growing evergreens; the larger trees of this character should be freely used in the general planting, but we now wish to speak of those things which are left to individual effort. Among the evergreens we include the European Ivy, one of the most useful of them all. Where the custom prevails of making a mound over the grave, it can be covered with a dense mantle of living green by the use of a few plants of Ivy. Most of the Junipers are useful, and give us a great variety in height, from the Prostrate Juniper, which lies flat upon the ground, to moderate sized trees. The Torreya of Florida is hardy at the North and makes a beautiful, large shrub. The Dwarf Pine (*Pinus pumilio*) and some other low-growing kinds, are useful. The different Arbor Vitæ give us quite a variety in color and size. The Golden Arbor Vitæ (*Biota orientalis aurea*), is most beautiful, and our native Arbor Vitæ (*Thuja occidentalis*) has varied so much that we have a dozen or so of named varieties. The Yews, which have been used for ages for this purpose, are some of them hardy; our native variety (*Taxus buccata*, var. *Canadensis*) improves greatly in cultivation. All the above are to be had at any nursery at moderate prices.

Deciduous shrubs present a long list from which to select, and we enumerate a few of the readily obtainable ones. *Deutzia gracilis* and the double variety of *Deutzia crenata*; *Daphne Cneorum*; several of the Mock Oranges or *Syringas* (*Philadelphus*); *Spiræas* in great number; White Persian Lilacs; several *Viburnums*, native and foreign; the *Clethra* of our own swamps; *Honeysuckles* of the upright kind; *Weigelas*, and many others, both wild and exotic.



The Prickly-fruited Gherkin.

Among the odd vegetables cultivated by the curious is the Prickly-fruited Gherkin, known also as the Jamaica and West India Cucumber. It is unlike the common cucumber in appearance, and, indeed, belongs to a different species, *Cucumis Anguria*. It is of an oval shape, about two inches long and a little more than half an inch across. The surface is thickly covered with soft spines, pale green, but of a clear yellow when fully ripe. The seeds are numerous and small. The principal use is in the green state

for pickles, for which it is prized by some. A correspondent, whose name we have mislaid, says: "The West India Burr Gherkin, or Oyster Gherkin, is easily raised. Plant in hills 3 or 4 feet apart like other cucumbers, say twenty seeds in a hill, for the small black fleas are very fond of them; thin out to two plants. They are generally made into pickles, but are much better and more wholesome cooked. Cut in two and boil, and season as may be desired." The term Gherkin is properly applied to a small pickled cucumber. We know of an instance in which a farmer who wished to raise cucumbers for pickles sent to a seedsman for the seeds of Gherkins and received those of this plant. He did not find out the mistake until his acre of plants began to bear this small, prickly fruit.

The Grape Vine—How it Grows and What to Do with it.—3d Article.

In procuring vines it is best to get good one-year-old plants—older plants, or layers, may be



Fig. 5.—AN UNPRUNED VINE.

equally good in certain cases, but not generally so. The manner of planting is sufficiently described in Notes for the Month. The vine consists of a mass of roots attached to a greater or less length of stem. If the variety is rare the stem will have but two or three buds, but often it will be two or three feet long. If a young vine, cut it off to three buds before planting. The questions will be asked, "What for? Why not let all the buds remain? What is the use of cutting away so much vine?" It does seem unnecessary to destroy such an amount of growth, and the questions are natural ones. An answer to them is to answer the query of "Why prune at all?" Upon pruning, and pruning intelligently, the whole success of vine growing depends. If a young vine, three, four, or more feet in length, were planted, and, as is often the case, left to itself, most of the buds would throw out shoots, the uppermost being the most vigorous. The next year nearly all of the buds on this growth would push, and another set of shoots would ripen into canes. Each year, the uppermost buds being the strongest, we should have the new growth farther and farther from the root. It has already been shown that the fruit is produced only on the new shoots, and that after a shoot has ripened into a cane it produces no more fruit, though it bears buds which will give rise to fruit-bearing shoots. There is, then,

in a vine left to itself, a yearly accumulation of unproductive and useless wood; an annual increase in the distance between the fruit-bearing shoots and the root; and where so many shoots have to be nourished, they will be weak, and the fruit, consequently, of inferior quality. There are other reasons for pruning, but these are sufficient. Compare a vine, fig. 5, which has been allowed to grow upon a tree at will, with figure 6, a vine trained by one of the simple methods, and the difference will be manifest.

To return to the treatment of the young vine at planting, which was to be cut back to three buds. It is very important to get the vine well established, with a good root and strong canes. Instead of allowing the young vine to produce several shoots, we leave but three buds, and when these have fairly started, rub off all but the strongest one. The object in leaving three buds is to guard against any accident. All the nutriment that would have gone into several buds is here directed to one, and the shoot will make a rapid growth, and at the end of the season will be from four to ten or more feet long. It will be just such a shoot as was described in February, but being a young vine will have no fruit. It must be kept tied up to a stake as it grows. Laterals will be produced at each leaf, as described last month. These, if left, will produce a number of side shoots. Whether they should be allowed to grow at will on a young vine, or be stopped in their growth, is a point upon which cultivators differ. Those who allow them to grow do so in the belief that the young plant needs all the leaves to aid in forming a strong cane and root, while those who check their growth and thus diminish the leaf surface, claim that the remaining leaves become larger, more robust, and hence more capable of resisting disease, and though the number of leaves is less, a more efficient surface of foliage is obtained on the whole. Besides this the whole length of the cane ripens more thoroughly.

In large vineyards perhaps the advantages gained by checking the laterals do not war-



Fig. 7.—THE LATERAL.

rant the expense, but otherwise we think it preferable to do so. The lateral was described last month, and for convenience we reproduce the figure here. This (fig. 7) shows a node with

its leaf, dormant bud, and lateral. If the lateral were broken entirely off, the bud, which should have remained quiet, would push; this is not only not desirable, but injurious to the future prospects of the vine. When the lateral has grown so long that two or three leaves are visible, all but the lower one are to be removed by pinching off the tender shoot with the thumb and finger, as at *a*, in the figure. The leaf that is left will soon increase in size, and at its axil a bud will push, the growth from which is to be in turn pinched back to one leaf (see *b* in the figure) and should another growth start from this, pinch it at *c*, and so on. Two or three pinchings are all that is generally required.

The whole care the first year is to secure a single cane as strong and well-ripened as possible, with well-developed buds and a correspondingly well-ripened root. It will, of course, be understood that the ground is to be kept clean, and the surface open by cultivation. The young vine being in this condition, what is next to be done with it? When the leaves have fallen, cut again down to three buds. Just here is where the novice is apt to fail; he has devoted all one summer to his vine, it has a beautiful cane, perhaps eight or ten feet long, and why should it not be left to grow larger and finer another year, and, it may be, give some fruit? It is a natural feeling, and it requires some faith to believe that good will come of thus destroying what has been produced with so much care. If one desires a good vine, no matter what is to be the future method of training, the second year must, like the first, be given to the growth of a single cane. Therefore in the autumn down it goes to three buds, a shoot from one of which is trained and cared for, as already described, the next spring. This one shoot having all to itself the root that would otherwise have been shared by many shoots, will push with great vigor, and form a much finer cane than the year before, and the vine may be considered as established, and a subject for any of the modes of training that we may hereafter illustrate. If, however, the second year's growth has been a weak one, the cutting back process must be repeated until a strong cane, a half inch in diameter, is obtained.

About Lawns and Grass Plots.

No matter how fine the trees and shrubs, or how beautiful the flowers, these do not show half their beauty unless set off by a carpet of grass. It is one of those embellishments that are within reach of almost every one, and conduces more to the attractiveness of a place, be it small or large, than anything else. Any well-kept surface of grass near the house is called a lawn, but those who do not like to be pretensions call their smaller areas grass plots. Whether large or small, to be permanent and satisfactory the work must be done more thoroughly than it generally is. It is true that we can point to some very fine examples, but much oftener the surface presents inequalities, the grass burns out in summer, and often unsightly weeds get such a foothold that the lawn, instead of being a pleasure, is a nuisance. There is an impression that grass will grow anywhere and on any kind of soil, while the fact is that the land that is to bear grass that will be undisturbed for many years needs very thorough preparation. Draining is in most cases advisable, and deep working of the soil absolutely essential. Small places may be trenched, but larger ones are worked with the plow and subsoiler. An abundance of good manure should be applied,

the soil prepared as thoroughly as for a garden crop. Levelling must be attended to—not that the whole surface should be a dead level, but there must be no inequalities of surface. The ground being manured, plowed, harrowed, levelled, and rolled, is ready for the seed. It is a good plan to delay sowing the seed for a few days, to allow any unevenness in the preparation to show itself, in which case hollows must be filled up and the surface again rolled.

Where the land is weedy it is a frequent custom to devote it the first year to potatoes or other hoed crop. On poor land, for which there is not sufficient manure, it is well to turn under green crops to aid in fertilizing it.

Any kind of spring grain may be sown, and before it comes into blossom, turn it under with a dressing of lime, then sow grain again and plow under the green crop as before, and after levelling and harrowing, sow grass seed in the fall.

The kind of seed to be used is of much importance. The imported "lawn grass" mixtures are generally unsatisfactory; we have tried them several times, and obtained only a sward of white clover. We know of successful lawns made with only one kind of grass, either the June grass, or Kentucky Blue-grass, as it is called, (*Poa pratensis*), or Red-top (*Agrostis vulgaris*). The Red-top makes the most velvety turf, but the June or Blue-grass stands the summer better.

Meehan recommends a mixture of one-third Ray-grass (*Lolium perenne*) and two-thirds June grass. We have not seen this used, but it is given on good authority. Some recommend a mixture containing Timothy; this should always be avoided, as the tendency of that grass is to form strong tussocks which soon make an uneven surface to the lawn. The quantity of seed is a point upon which practice differs. Thick seeding is undoubtedly advantageous, but it may be overdone. Perhaps three bushels to the acre may be given as the medium. Some add white clover to the grass seed, and others, again, add a small proportion of the seed of the Sweet-scented Vernal-grass for the sake of the pleasant odor given off when the grass is mown. When the lawn is made in spring it is not necessary to sow grain with the grass, as is sometimes done, though it is beneficial when the lawn is seeded in the fall. The subsequent management of the lawn as well as the turfing of small plots must be left for another article.

The Red Cedar.

The Red Cedar is a much more important tree at the West than people at the East have any idea of. It grows with great rapidity, and has an appearance of thrift and vigor that would surprise one who had only seen it along the seaboard. It is in such request, not only for ornamental planting, but for the economical purpose of shelter, to both of which uses it is admirably suited, that great interest is felt in its propagation. The seeds, as planted ordinarily, will stay in the ground two, and sometimes three years before they germinate. Mr. Samuel Edwards, of Illinois, recommends mixing the seed with moistened ashes, with the view of making them more permeable to moisture. Mr. F. Lee, of Clark Co., Ill., thinks he has a better and easier mode. He says: "Put in a sack as much seed as you wish to grow, place the sack in a kettle of boiling water, and allow it to remain for about five minutes. Take them out and rub with the hands to remove the pulp, and the seeds are ready to put in the ground; plant in drills a foot apart, in soil where clay predominate,

on the shady side of a fence running east and west. The shade of the fence keeps the ground moist. I have seen my mother grow hundreds of cedars by this simple process. The seed should be planted about March 1st in this latitude (39°); farther north, later would do."

The Quince—Culture and Varieties.

"Quinces are a profitable fruit, why do you not oftener recommend them to be planted?" writes some one. It would be much more to the purpose if we were to advise care of them after they are planted. Generally a quince tree is little else than a nuisance! Planted in a low corner and left to itself, it forms any amount of suckers, and these, with the interlaced branches, make a thicket rather than a tree. Young trees need a few years' care in training and pruning, and then they form beautiful objects, whether in flower or in fruit. The popular notion that the quince needs a very moist soil is a mistake; set the young trees in good, rich, deeply worked soil, such as is fit for other trees, cultivate well,

basis upon which to form an evenly balanced and open head. For a head higher up, a single straight stem must be trained. If the nursery tree is crooked, let it grow a year, and next spring cut it down to near the ground, allowing but a single shoot to grow. This must be kept tied to a stake as if it were a vine. The next spring shorten it back to a good bud, cut back the side shoots to two or three buds, and tie the upper shoot to the stake for a leader. When a good self-supporting stem is obtained by this management, the head may be formed at the height of three feet. The variety most common is the Apple quince; the Pear quince is also much grown. Pomologists differ in opinion as to which is the better of the two, probably for the reason that seedlings have been produced differing somewhat in quality. The Portugal is esteemed better than either, but is a poor bearer. The Angers, the variety so much used for pear stocks, is said to give a good fruit, but it is seldom grown for this purpose. It is singular that so few experiments have been made to produce new varieties of this old and generally valued fruit. The only one that has of late years appeared in our fruit lists is Rea's Seedling, which originated in Green Co., N. Y. We were much pleased with the appearance of this variety in the grounds of Ellwanger & Barry; the tree is a good grower, a good bearer; the fruit large, fair, and of excellent quality. We give an engraving of a specimen obtained at the time. The quince, except the Portugal, is readily raised from cuttings, and any one can grow young trees with but little trouble. It is best to select the cuttings from bearing trees, the quality of the fruit of which is known; they should be about a foot long, and from wood of last year's growth. These are best cut in autumn and kept buried during the winter, but fair success may be had with spring set cuttings



REA'S SEEDLING QUINCE.

manure if needed, and they will pay. The application of an occasional dressing of salt is said, on good authority, to be beneficial. Twelve feet apart each way is the usual distance for the quince. The treatment of the young tree will depend upon the height at which the head is desired. A young quince tree, as sent from the nursery, is usually very twiggy and unpromising in appearance. For a low-headed tree cut off all the lower branches so as to get a clean stem for 18 inches; above that select four of the best branches that are evenly distributed around the stem, and shorten these to three buds each; cut all the rest away, top included. Suckers and all growths that push out from those from these buds, are to be rubbed out, and thus is secured a

in a bed that can be watered in case of drouth. See note on Planting Cuttings in March "Basket." Prune neglected and unfruitful trees into shape and give them a good dressing of manure, and dig out borers, which are apt to trouble the quince.

Peach Culture.

New land of sufficiently good quality to produce grain crops is best. Light land is selected, as the trees come into bearing soon, but those on heavy soil, if well drained, last longer. Situation has much to do with success; a cold much below zero will destroy the vitality of the flower buds, especially if the cold occurs just after a warm spell. So uncertain is the crop

from this and other causes that cultivators think themselves fortunate if they have two good crops in five years. Ordinarily the land is plowed as for grain, but deep working would be much better. Twenty feet apart is the usual distance for planting. Before planting, the trees should be examined for any signs of the borer, and if found, the grub must be cut out. The trees should be cut back to the distance at which it is desired to form the head. The usual practice is to head the trees at three or four feet from the ground, but some form it much lower. The spaces between the trees are cultivated in corn,

potatoes, or other crops, and it is a common practice to sow buckwheat in the orchard. The trees usually come into bearing the third year after planting, when the growing of crops is discontinued, but weeds are kept down by the use of the plow and harrow. In ordinary culture but little pruning is done, except to remove broken and diseased limbs, but there is no doubt it would pay to shorten in the new growth, not only in increased fruitfulness, but in the greater longevity of the tree. When the peach is allowed to grow without shortening the limbs, they elongate and the tree becomes straggling, and the fruit being borne at the extremities of the branches they often break down with the weight. By cutting off half or two-thirds of the previous season's growth each spring, and at the same time thinning out crowded or useless shoots, a round, compact head is formed, and a supply of young wood—which is necessary to continued fruitfulness—is maintained. Besides the injury from extreme cold, the cultivator has to contend with the curl, the yellows, and the borer. Good cultivation is the best preventive of the curl. The yellows is less liable to appear on new land, but wherever it appears the only remedy is to convert the tree into fire-wood. Various plans have been devised to keep the borers out. One is to make a bank of earth a foot high around the trees in June, and level it just before it freezes; another is to draw the earth away from the tree so as to uncover the collar and upper portion of the large roots; in either case the object is to expose the borers, which have not yet entered the tree, to the attacks of birds and to freezing. Wrapping with paper or other protecting material, and other devices for preventing the borer from entering, have been suggested. None of these will do away with the necessity for watchfulness. Whenever the gum exudes, the borer is to be looked for; cut it out at once with the knife or gouge.

Varieties are numerous, and each peach region has some peculiar to itself, or old sorts under local names. The selection of one grower in Southern New Jersey is Troth's Early, Walter's Early, Harker's Seedling, Oldmixon Free, Ketchell's Favorite, Crawford's Early, Crawford's Late, and Stump of the World. This list does not include Hale's Early, earlier by ten days than Troth's, nor Early York, nor Honest John, Ward's Late, and others that are much grown in New Jersey. The late Mr. White's selection for the South is Early Tillotson, Crawford's Early, Stump of the World, Oldmixon Cling, Washington Cling, Heath Cling.

The Missouri Horticultural Society recently discussed Peaches, and a committee reported a useful table of the times of ripening of the

different varieties at St. Louis. Of course the times given will be earlier than in less favored localities, but the differences will remain about the same. Hale's Early, July 20th; Troth's Early, July 30th; Large Early York, Aug. 7th; Yellow Raricripe and Crawford's Early, Aug. 10th; Oldmixon Free, Aug. 20th; Oldmixon Cling, Aug. 25th; President and Morris White, left blank; Stump of the World, Aug. 30th; Columbia, Sept. 5th; Crawford's Late, Sept. 10th; Washington Cling, Sept. 15th; Ward's Late and Late Admirable, Sept. 20th; Smock and La Grange, Sept. 25th; Heath, Sept. 30th.



THE LEATHER-LEAF—(*Cassandra calyculata*.)

The Leather-Leaf.—(*Cassandra calyculata*.)

In April there may be found along the edges of swamps and in boggy meadows a little shrub, the Leather-leaf, with flowers of such a pure white, and altogether so neat and attractive in its appearance, that one is tempted to gather it, even at the risk of wet feet. It has always been a great favorite with us, as it not only comes very early in the spring, but is one of the few of our wild flowers that will allow us to anticipate their season of bloom by forcing in a warm room. The buds of the Leather-leaf are formed the preceding summer, and are ready to open on a slight provocation. A handful of the branches gathered in mid-winter will flower in perfection if placed in a glass of water in-doors.

The Cassandra, which is a much prettier

name than Leather-leaf, is quite common at the East and North; it is a branching shrub, from 2 to 4 feet high, with thick, dusty looking leaves, which remain upon the branches all winter until the flowers open. The little egg-shaped, white flowers are borne in the axils of the leaves along the branches, and form a one-sided cluster. The engraving shows a flowering branch of the natural size. This species is prized in England, where it is found in collections of "American plants," but it is seldom seen in cultivation in our gardens. A friend succeeds in growing it by using a plenty of muck in the soil. With a little

pains to imitate in a measure the natural condition of the plant, this early flowering shrub could no doubt be cultivated in our gardens with success. This was formerly called *Andromeda calyculata*.

SAVE THE EARLIEST.—We have often advised those who save their own seed to select the earliest and best. "J. G. C.," of Wickford, R. I., a gentleman who gives us a case in point, though at the advanced age of 87, still keeps up an interest in gardening. "I have cultivated one kind of peas, called the Early Junes, thirty-two years, and have the date of planting and first picking each year. The last ten years they have averaged four and a half days earlier than the first ten, which I attribute to the method of selecting the seed. Instead of saving all that grows on a portion of the vines, I save the first setting of the whole, and pick them as soon as fully ripe. The Early Junes are very prolific, grow about 3½ feet high, and have not increased in height since the first planting. Of the many varieties of "Extra Early's," annually advertised, I have tried several sorts in order to get an earlier kind, but all my trials have proved failures. The Dan. O'Rourke came the nearest, but they were at least three days behind, and less prolific."

THE SEBEC POTATO.—DOCT. B. H. STEVENS, Essex, Conn., writes: "Last spring I sent to Maine and got a quantity of the Early Sebec potatoes, and found them large and handsome. I planted as directed, putting only two eyes in a hill; I think I could not have used more than 3 barrels to the acre. They started early and grew well. There were vines enough, and I sometimes thought that cutting to one eye would have done as well. They were fit to dig 10th to 15th July, (that was early with us last season). I had from one acre 300 bushels of large, smooth, handsome potatoes. I planted the Early Goodrich in the same way, and the yield was about the same; it is not as early, not as good eating, not as fine, and with more small ones. The Sebec we think with us the best early potato that grows. It resembles the Mercer, and it has the same pink streak running through it when cut. I cannot speak too highly of the Sebec. It did nobly with us last season, and gave us a large yield, while almost all other kinds failed." This variety, which is quite popular "Down East," is not as generally known as its merits deserve. It was figured in our Horticultural Annual for 1867, where it is highly commended by Mr. Barr and Mr. Gregory. Mr. G. says that the Sebec will admit of being dug earlier in proportion to the maturity it has attained than will the Early Goodrich, and is excellent and prolific.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

The Game of Croquet.

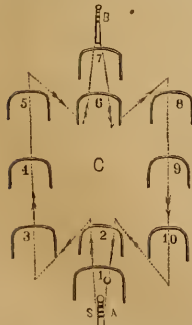
These sunny days and the springing grass remind us pleasantly of the mallets and hoops that were laid aside only with the late frosts. The popularity of croquet (pronounced *cro-kay*) is not difficult to account for. It is one of the few outdoor games which both sexes can share. The implements used in the pastime are simple and cheap, the field for its enjoyment is the yard or lawn adjoining the home, the exercise is gentle, and facilitates rather than hinders conversation. It is always at hand—a pleasant relaxation for young and old. It is best known in cities and villages. Many think it deserves a wider range in the country, where the people work quite as hard, and need quite as much a cheerful recreation. All the materials of the game can be got up by any skillful boy who can use a lathe and handle a brush.

The *Mallet* seen in the hands of the player, fig. 1, requires a thin, round handle about three feet in length; the head say 5 inches long, and $2\frac{1}{2}$ inches in diameter—smaller in the middle than at the ends. The bottom of the handles should be painted with different colors to correspond with one of the balls. It takes eight of these mallets to play a full game.

The *Balls* are also eight in number, and should be painted with a single stripe, or all over, of the following colors: blue, pink, black, yellow, brown, orange, green, red. They should be about eight inches in circumference, perfectly round, and should be made of hard wood, maple, cherry, oak, ash, or walnut.

The *Hoops*, ten in number, are made of iron, about 16 inches high and twelve wide, and painted white, for convenience in seeing, if the game should be prolonged into the twilight, as sometimes happens. Wire $\frac{3}{8}$ of an inch in diameter will answer a good purpose. Rods of wood might be used, but they are not as durable and are not recommended.

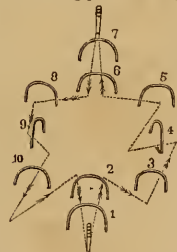
The *Posts*, two in number, should be about 24 inches high, and sharpened for driving into the ground. The upper end is marked with 8 divisions,



as seen in fig. 2, by painting in colors to correspond with the balls. This arrangement of colors is to distinguish the two sides in playing, the alternate colors being matched against one another. This arrangement brings the light colored balls on one side, and the dark upon the other. The arena, or spot for playing, is a matter of some importance. Any smooth turf will answer, but it is better to have it graded perfectly level for the purpose, as it gives a much better chance for skillful playing. Make the turf thick by top-dressing and frequent mowing, and it will last much longer. The game begins by choosing sides, the captain of one side taking the blue ball and mallet, and the captain of the other side the pink, and so on in due order. Eight can play, or any smaller number down to two. If only two play they can use two balls

each, playing them alternately. The hoops may be arranged in either of three orders, shown in figs. 2, 3, or 4. The playing begins at the spot or foot of the arena, and the object is to drive the balls through all the hoops in the direction indicated by the dotted lines and arrows, and to strike the two posts. The side all of whose members do this first wins the game. To "croquet" is to put your own ball against the one you have hit, and holding it firmly with the foot, strike it with the mallet and send off the ball it touches by the communicated force. As you can "croquet" friend or foe and help or hinder the object in view, this croquet-fig. 3. CROQUET GROUND. ing becomes a very important part of the game.

The captain holding the blue ball places it in any direction, twelve inches from the starting stake, and with a blow tries to drive it through the first hoop. It is his stroke as long as he drives the ball through a hoop. When he fails, the captain on the other side plays, and it is his stroke if he drive his ball through a hoop, or hit his enemy's ball. The hitting is called "roqueting," and gives him the privilege of croqueting, which he does by sending his enemy's ball as far off the track as possible. When he has missed, the other players follow in the order in which the colors are marked upon the post. Until a player has gone through the first hoop, he is not allowed to have an extra turn, if his ball hit that of another. The player who reaches the turning post first has great advantage for a time,



for as soon as he touches it he commences his return journey, and meeting the other players on their road to the farthest part of their journey, he is able to croquet them and considerably impede their progress. When a player has passed through all the hoops he becomes "a rover," and is privileged to rove about all the ground, croqueting his friends and foes. A good player, when thus situated, can prove of immense advantage to his side, and should on no account hit the starting or winning post until all on his side have passed through the last hoop. The game grows most exciting as the last pair approach the winning post, when one by a dexterous stroke hits it and wins the game.

Parlor Croquet is played upon a board made for the purpose, with the same arrangement of hoops and posts as shown in the diagrams. The mallets, balls, and hoops, of course, have to be much smaller, and the croqueting must be done by placing the forefinger, instead of the foot, upon the ball. The best boards have a rim to them with a steel wire stretched parallel to the sides and ends, against which the balls strike and rebound. This gives opportunity for much more skill in the game.

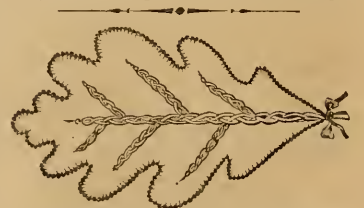
The rules of the game are quite numerous, and differ somewhat in different localities. We have indicated the essential principles and course of the game, and any rules may be adopted that the players can agree upon. They are soon learned from a skillful player, or from little manuals that are sold with the materials of the game—often separately.

A Convenient Cooking Table.

Mrs. M. S. W. sends the following account of a contrivance which she has found very convenient in the kitchen of an old-fashioned house, where pantries and closets were omitted by the builder:

"Having for several years walked miles each day while doing my cooking and dairy work, and now having the comfort of a cooking table established within eight steps of my cooking stove, I will describe it, hoping some woman of many steps may be induced to supply the need for herself. My cooking table is eight feet long (it should be nine), and is placed in a recess between the chimney and a window, the size of which decided its length. It is two feet seven inches high, and should be two feet three inches wide on top. Below, it is enclosed at the back and ends, and has doors in front. It has no floor, but stands directly upon the floor of the room, and is movable. The enclosed space below is divided into three compartments. The right hand closet contains the flour barrel; a door coming down to the floor opens to admit it, and closes tightly again until the next barrel is needed. Inside, there is space to hang baking pans by their rings on the partitions; over the flour barrel is a lid that is raised whenever flour is to be taken out; the sieve and scoop remain in the barrel. The lid is a part of the surface of the table, and opens over the whole width of the flour compartment. Above the door of the middle closet there is a drawer without back or sides, which is the bread board. When drawn out and turned around, the front becomes a back, and is very useful in preventing the scattering of flour in rolling pastry, etc.; when returned to its place the roller can remain upon the board. Below this drawer is a closet with a door, and a shelf large enough for a pan of milk, or bowls and pudding dishes; below the shelf is space for a bucket of sugar, jar of lard or cream, and molasses jug.

The left hand closet has at top a drawer divided into two compartments, one for eggs, the other for spices, yeast powders, nutmeg grater, cake cutter, etc.; a shelf below holds boxes of saleratus, a bag of salt, boxes of rice or tapioca, jug of syrup, jars of preserves while in use, etc., or is an excellent place to keep pies. I can assure any woman who has not better conveniences that it is a great saving of time in cooking to have all these within reach of her hand, without stepping from her place. The table, including its surface, being about an inch and a half higher than a flour barrel, a short woman cannot roll pastry or mould bread easily without something to stand upon. I have a narrow piece of board about two feet long, with two pieces of inch board nailed across its underside. This is one of the best conveniences of all, for on a cold morning when I have biscuit to bake, I warm my wooden cricket by the fire, and it saves me from any uncomfortable chilliness, and as the closet door swings over it, is not in the way. The table may be of pine, and stained or not in front, or of black walnut. There should be a narrow strip of wood nailed upon the back of the surface of the table, and one across between the principal part of the table and the flour division, to keep water from flowing over the back or into the division containing flour, when washing the table after cooking."



Household Ornaments—Pen Wiper.

Miss Lizzie Holmes, of Des Moines Co., Iowa, sends us the following sketch and description. (The engraver has magnified the leaf-veins to an unnatural size, in order to show the stitches. The engraving is a little more than one-third the size of the article itself.) "A very pretty *Pen Wiper* may be made as follows: Cut two pieces of black, gray, or brown cloth, the shape of the above pattern. Work the veins on one leaf with green silk or worsted, in chain or herring-bone stitch, and on the

other with red. Then cut two pieces of black silk of the same shape, and baste on the under side of each leaf as a lining; finish the edge of each in button-hole stitch with worsted or beads. Cut half a dozen leaves of some soft, black material, and lay between the two covers, fastening at the stem with a bow of narrow ribbon, or covered wire."

Variety at the Table—Two "Bills of Fare."

Variety is said to be the spice of life. Our good housewives seem to believe the adage, so far as it respects food, for what one of them is there who is not *always* worrying herself over the question, "what shall I get for breakfast, or dinner, for a variety?" Some time since we referred to the experience of a lady who kept three cards on which she had written down, 1st, The names of articles always at hand, and good for breakfast at all seasons; 2d, Those not so common or not always to be desired. The other two cards, one for noon, and the other for evening, contained similar lists for those meals. She stated that it was often a relief or help to run her eye over the cards, and select what she would have, without delay. . . . MRS. A. M. HOFFMAN sends to the *American Agriculturist* the following programme, or bill of fare, for a week's meals during two seasons of the year, which we print as suggestive. Such a variety can only be provided at the tables of well-to-do families, and with plenty of room and help, but every housekeeper can change and modify it to suit her own circumstances.

For Spring.

MONDAY.—*Breakfast:* Minced veal, omelette, fried potatoes, milk toast, coffee. *Dinner:* Beefsteak, mashed potatoes, salsify, horseradish, custards. *Tea:* Dried beef, biscuits, canned fruit. Salsify cake. [As Monday is "washing day," would not the variety proposed for breakfast occupy the whole stove or range, to the exclusion of the boiler, which should be early at work heating water? And would not the preparation occupy too much time of the help, if the cook also does the washing?—En.]

TUESDAY.—*Breakfast:* Ham and eggs, potatoes warmed in cream, Indian cakes, maple syrup. *Dinner:* Veal pie, boiled potatoes, spinach, fried parsnips, baked butter pudding, with sauce of butter and sugar stirred to a cream, flavored to suit the taste. *Tea:* Waffles, maple syrup, or maple sugar shaved fine.

WEDNESDAY.—*Breakfast:* Dried beef cooked with eggs and cream, baked potatoes, muffins, coffee. *Dinner:* Beef soup, baked fish, vinegar sauce, potatoes mashed, fried parsnips, horseradish, Marlborough pie. *Tea:* Canned cherries, egg puffs, New England ginger-bread.

THURSDAY.—*Breakfast:* Fried liver, fried potatoes, scrambled eggs, mush of Graham flour, eaten with cream or cream and sugar. *Dinner:* Beef pie of Wednesday's soup-meat, spinach, asparagus, boiled potatoes, roly-poly pudding. *Tea:* Boiled custards, stewed or canned raspberries, Graham bread, sponge cake.

FRIDAY.—*Breakfast:* Veal cutlet, fried potatoes, horseradish, creeses, corn bread, coffee. *Dinner:* Boiled codfish, egg sauce, mashed potatoes, fried parsnips, salsify, bread pudding. *Tea:* Biscuits, currants canned or stewed, radishes, soft jumbles.

SATURDAY.—*Breakfast:* Codfish halves, poached eggs, toast, coffee. *Dinner:* Pica soup, boiled pork or ham with greens, kale, horseradish, mustard, rhubarb pie. *Tea:* Fresh ry and Indian bread, pot cheese, creeses, dried apple sauce, cookies.

SUNDAY.—*Breakfast:* Bread and butter, boiled eggs, pepper-grass or creeses, coffee. *Dinner:* Veal stuffed and baked, mashed potatoes, lettuce, asparagus, spinach, pickled plums, lemon pie, coconut pie. *Tea:* Biscuits, warm maple sugar, cold veal, radishes, Queen's cake. Stewed fruits are always suitable for spring breakfasts.

For Summer.

MONDAY.—*Breakfast:* Broiled mackerel, fried potatoes, cucumbers, bread and butter, coffee. *Dinner:* Cold ham, boiled potatoes, string beans, lettuce, mince pudding. *Tea:* Stewed gooseberries, bread and butter, radishes, pot-cheese, soft jumbles.

TUESDAY.—*Breakfast:* Fried liver, fried mush, new potatoes warmed with cream, young onions, coffee. *Dinner:* Broiled veal, mashed potatoes, summer squash, fried egg plant, peas, lettuce, cherry pudding. *Tea:* Strawberry short-cake, strawberries and cream, and plenty of strawberries.

WEDNESDAY.—*Breakfast:* Griddle-cakes, omelette, fried potatoes, pepper-grass, currants in sugar, chocolate. *Dinner:* An old fowl, boiled whole, then browned in the oven and chicken soup made from the liquor, lima beans, cucumbers, mashed potatoes, raspberry pie. *Tea:*

Fresh bread, radishes, blanc-mange and berries, cookies.

THURSDAY.—*Breakfast:* Fish broiled or fried, baked potatoes, hominy balls, cucumbers, horseradish, mush made of "grits" or cracked wheat. *Dinner:* Roast lamb with mint sauce, peas, egg plant, stewed tomatoes, new potatoes cooked with cream, muskmelons. *Tea:* Blackberries, bread and milk, huckleberry cake.

FRIDAY.—*Breakfast:* Cold lamb warmed up in gravy, fried potatoes, sliced tomatoes and onions, coffee. *Dinner:* Boiled beefsteak pudding, beans, early cabbage or cauliflower boiled with cream, stewed tomatoes, boiled green corn, potatoes, boiled blackberry pudding, suet crust. *Tea:* Stewed plums, biscuits and butter, cup cake, tea.

SATURDAY.—*Breakfast:* Mock-oysters or green corn cakes, fried potatoes, cucumbers, radishes, hot rolls, coffee. *Dinner:* Vegetable soup of beef, Irish stew of the soup-meat, boiled potatoes, French turnips with cream, green apple pie. *Tea:* Rasks, cheese, blackberries, baked sweet apples.

SUNDAY.—*Breakfast:* Minced codfish with hard boiled eggs, potatoes in cream, corn bread, coffee. *Dinner:* Roast pig, cold, currant jelly, stewed apples, succotash, hot slush, boiled onions, potatoes, watermelons, plums and peaches, raspberry shrub. *Tea:* Biscuits, peaches and cream, fruit cake, jelly cake, lemonade instead of tea (the day being very hot).

Hulled Corn.

The old-fashioned hulled corn is prepared as follows: To make lye enough for three quarts of corn, take about 4 quarts of ashes and boil them an hour in about 8 quarts of water. Hard wood ashes are best. After the ashes have settled, turn off the lye, which will be about six quarts. Put the corn into the lye and boil three hours, or until the hulls begin to come off freely. Then take out the corn, put it into cold water and boil again. Keep boiling and changing the water until it is perfectly clear, rubbing the corn with the hands as the water is poured off, to clean off the hulls. The water will need to be changed a half dozen times or more. This will remove all the lye and make the corn white and soft. It is now ready for use and will keep in cold weather several weeks. It is fried with salt pork gravy and makes a nice dish. It is also warmed up and eaten with milk, or like hominy, with syrup. The white dent corn of the South is the best for this purpose. Potash lye is sometimes used, but does not leave the corn so white.

To Clean Tripe.

"X. Y. Z., Amenia, N. Y., writes as follows:

"Take the pouch out on clean straw, empty with care, turning it inside out. Rinse thoroughly; cut in convenient pieces; have ready a kettle containing 3 or 4 gallons of hot, but not boiling water, with a tablespoonful of slaked lime to each gallon. Scald one piece at a time, lay it on a smooth board or table, and with a smooth-edged knife scrape the inside perfectly clean. Wipe off the board or table before scalding another piece, and be careful to keep the scalding water at the right temperature. Soak in cold water a few days, changing the water daily, until the tripe is clean. To make the best possible use of the tripe, take coarse pieces of beef, both fat and lean, from the flank, shoulder, and neck. Cut into pieces of not more than one inch in thickness, season highly with salt and pepper, and sew it up in pieces of tripe with a coarse needle and strong thread; have the balls of meat, when sown up, moderately compact and of about five inches diameter more or less, round, oval, or any other shape. Boil until they can be easily pierced with a straw. Put them into a tub, or stone-wear pot, and add vinegar, and they will keep a long time. When wanted, cut in slices $\frac{3}{4}$ inch thick, and fry in some of the gravy that boiled out, to a delicate brown; serve with fried apples.

A "Tidy."—The following directions make a simple and elegant one. Take a piece of thin muslin, ten inches square; in the center draw any design you choose—a palm leaf or other simple figure—and work it in chain stitch with scarlet wool; turn down the edge, as if for a hem, and work

around in button-hole stitch with the same wool; finish with a ruffle (not too full) an inch and a half wide. The ruffle should be futed. Double zephyr is the most suitable wool to use, and a half ounce will be a great abundance for an ordinary tidy.

Rusting Metals Prevented.—Lard or any kind of grease entirely free from salt will shut out air and moisture, both of which are essential to oxidation or rusting. A little resin (common "rosin") melted with lard makes the best coating for all kinds of iron and steel surfaces. It can be rubbed on table knives and forks, and other fine instruments, and then mostly wiped off, still leaving enough to protect the surface. The resin prevents rancidity of the lard, and is itself a protection. This mixture is cheap, and good for plowshares, and all farm or mechanical implements of iron or steel. Two or three ounces, or more, of resin may be added to a pound of lard.

How to Take Care of a Watch.

By R. L. H., Ind. Delicate time-keepers would not get out of repair so often, and would last much longer, if the following rules were observed. 1. While winding, hold the watch perfectly still. 2. Have a key that fits closely to the winding post, so that there can be no slipping. 3. Have it cleaned once in a year or 18 months, to save friction. 4. Never trust it to a poor workman. 5. In regulating it, always compare it with the same time-piece, one that can be relied on, and if it does not gain or lose more than half a minute a day, do not touch the regulator at all. 6. Open it only when necessary, as small particles of dust will get in and injure it. 7. If it stops, do not try to remove the obstacle, but take it to an approved watch-maker. Many valuable watches are annually spoiled by careless handling and tinkering.

Ice Cream Cake.—1 cup sugar, 2 cups flour, $\frac{1}{2}$ cup milk, 3 eggs, (beat the whites separately), $\frac{1}{2}$ cup butter, 1 teaspoonful cream of tartar, $\frac{1}{2}$ teaspoonful soda. Flavor with vanilla. Appropriately named.—*Miss Libbie Leffingwell, Rome, N. Y.*

Apple Meringues. (Pronounced merrins.)—Pare 6 pleasant apples, core in halves; put in a dish, with the juice of one lemon. Stew in the oven until tender, and cover with the whites of 3 eggs beaten to a stiff froth, with $\frac{1}{2}$ cup of sugar. Brown in the oven. To be eaten with boiled custard made of the yolks.—*Miss Leffingwell.*

The following are contributed by Mrs. D. W. Sutton, of Westchester County, New York.

Jelly Cake.—One cup of sugar, 1 cup of flour, 3 eggs, $\frac{1}{2}$ cup of cream, $\frac{1}{2}$ teaspoonful soda.

Farmers' Fruit Cake.—Chop and soak 3 cups of dried apples over night; simmer 2 hours in 2 cups of molasses, add 2 eggs, 1 cup sugar, 1 cup milk, $\frac{1}{2}$ cup butter, heaping teaspoonful of soda; make a rather thick batter, and bake in a quick oven.

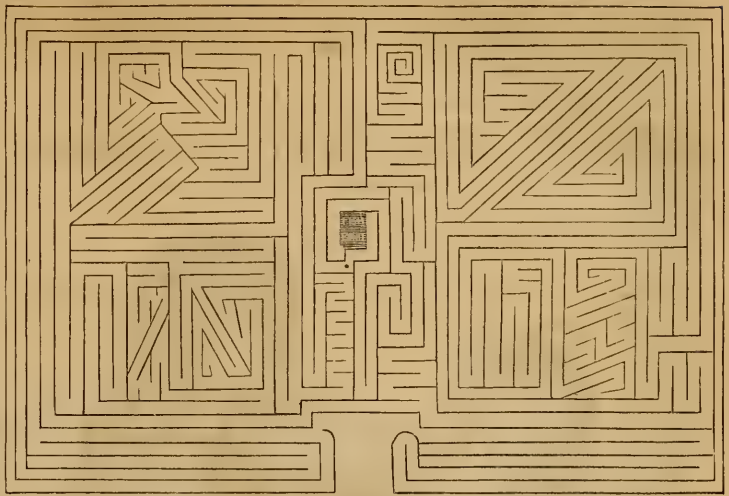
Drop Cake.—Six cups of flour, 3 cups sugar, 2 cups butter, 1 cup milk, 3 to 5 eggs; flavor with nutmeg; drop on tins and bake.

Frothy Cream and No Butter.—Mrs. S. writes: "We have churned here for twelve hours without getting butter or having any sign of it. The cream indicated over sixty-four by the thermometer, it foamed, and we applied warm water; but it did no good, the more we churned the worse it got. We would like a remedy." Cream once frozen is very likely to froth when churned, especially if churned too warm. In this case we have little doubt the cream was too warm—"over 64"—is rather indefinite, and too hot at any rate. The butter probably came and was whipped into froth without gathering at all. Warm water and more churning only made it worse, of course. Much cold water would have chilled it so that it would have gathered in small granular masses, not much bigger than mustard seed, and so it would have long remained. A small quantity of cold water added every few minutes while churning would probably have caused the butter to gather uniformly by the time the temperature reached 62°, or soon after; but it would probably have been without color or fine flavor. Standing till cooled down to about 60° would probably have produced a similar effect, and perhaps more easily,

BOYS & GIRLS' COLUMNS.

A Wonderful Musical Instrument.

A gentleman in this city recently exhibited the powers of a musical instrument remarkable for its construction and for the almost endless variety of tones produced with it. All the ordinary notes, as heard in conversation or in singing, the cries of different animals, the songs of birds, of many different wind and stringed instruments, were brought out with clearness, and the volume of sound could be increased so as to be heard a quarter of a mile, or in an instant reduced to the gentle sound made by the rustle of a falling leaf. It consisted of a simple tube made of several pieces joined together so that the parts were easily moved by hands and strings attached. Inside the tube were two small, thin slips which vibrated easily, after the manner of a reed in a cabinet organ. The tube was attached to a moderate-sized pair of bellows, so constructed that a small or large quantity of air could be forced from them at the will of the operator. From an examination of the instrument no one would suspect that its power of expression could be so varied. A most interesting part of the performance was where the different feelings and passions of the mind were expressed by the modulations of sound. Anger, fear, hope, joy, love, and even the more delicate shades of feeling, such as distrust, bashfulness, and vanity, were clearly represented. Fortunately for the enjoyment of the public the instrument is not patented, the inventor having left it open for free use by the public. We understand that several hundreds have already been brought into use in different parts of the country. Any one desiring to know more about it should take pains to cultivate his voice, and he will discover that this wonderful instrument is situated in his own throat. If properly used it will do all we have said, and much more. We think it should be considered all the more valuable because it is so very common.



No. 302. Labyrinth.—Find your way from the entrance to the Fish Pond without crossing a line.

portion as should please them, having full confidence in their friendship. When the time came, the greedy executors assigned him one-tenth of the estate, and kept the rest. The young man, being naturally dissatisfied, brought suit against them, a trial was had, and the judge decided that he should have the nine-tenths, and the executors the one-tenth, on the ground that they had shown by their conduct that the nine-tenths pleased them.

What Is a Month?

"Four weeks," answers a boy just from school, who has been learning the "Tables" in his Arithmetic. "Thirty days," says a clerk, who has been reckoning interest on a note. "The twelfth part of a year," suggests some thoughtful scholar, after thinking of the matter a moment. Neither answer is entirely correct. February is the only month consisting of four weeks, and it has more than that in leap year; the other months have either 30 or 31 days, neither of which is the twelfth part of a year. The word "month" was formed from the Saxon word *mona* (the moon). Formerly a month meant the time of one revolution of the moon around the earth, equal to 29 days, 12 hours, 44 minutes, and 3 seconds. Ten such months were counted a year in the time of Romulus, King of Rome. March was reckoned as the first month. The names of the nine following ones were the same as now, excepting July and August, which were called Quintilis and Sextilis. It was found before long that the seasons did not keep pace with the year; March did not bring spring again, and the following seasons were equally tardy. To remedy this, the Emperor Numa added two months, January to the beginning, and February to the end of the year. This was afterward changed, and February placed where it now stands, the second month. At that time the months contained 29 and 30 days alternately, which would give 354 days, to which one was added to make an odd number, which was supposed to be more lucky. Still, the seasons would not come regularly at the same time of the year, because their changes are produced by the earth's revolution about the sun, which requires 365 1/4 days very nearly, and the year should therefore be of this length, to have the same month bring the same kind of weather every year. It was therefore ordered that another month, of 22 and 23 days alternately, should be inserted every second year between the 23d and 24th of February. This would have answered the purpose for a long period of years, but the ruling powers occasionally interfered with it, in prolonging or shortening the time of holding office. At last the Emperor or Cæsar decreed that the year should contain 365 days, with one day added every fourth year. He also decreed that the odd months, that is, the first, third, etc., should have 31 days, the others 30, excepting February, which should have 28, with one added every fourth year. The names Quintilis and Sextilis were changed to July and August, in honor of the Roman emperors Julius Cæsar, and Cæsar Augustus. The latter emperor also decreed that August should have 31 days, as he was not willing to have July contain more than the month named after himself. This arrangement has continued until the present time, excepting that in 1582 it was decreed by Pope Gregory XIII, that the added day for leap year should be

omitted in years ending in centuries, excepting the 400th and the years which are multiples of 400; this makes the civil year correspond almost exactly with the solar year, and the four seasons continue to occur with regularity during the same months of each year.

Comical Action Puzzle.

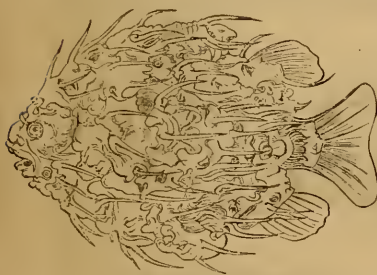
This is best performed in a company of a dozen or more, but will give amusement wherever tried. Let all be seated around a table. At a signal from the leader, the following three motions are to be made: first, strike with both hands, palms downward, upon the table; second, clap the hands together; third, with the right hand take hold of the nose, and with the left hand seize the right ear. These motions are to be made quickly, and it will usually cause a hearty laugh to see what directions the puzzled hands will take. After a little practice has made it easy, reverse the hands, seizing the nose with the left hand, and the left ear with the right hand.



No. 303. Illustrated Rebus.—A truth to be remembered.

Answers to Problems and Puzzles.

The following are answers to the puzzles in the March number, page 107. No. 299. Shadow (*shad oh*)... No. 300. Sent; tens; east (a point of the compass)... No. 301. All's well that ends well... The following have sent correct answers to some of the puzzles previously published. Arthur T. Butler, Walker Adams, C. Langdon, George N. Buel, C. A. McArmev, Thos. J. Lannon, Frank T. Robinson, W. Anderson, Elmer S. Dodge, Eli. Mrs. G. K. Barker, D. Van Buren, R. G. W. English, Linnie Lathrop, W. J. Brown, Daisy Wilder, Joseph Sheets, J. Milton Snyder, Columbus Snyder, George C. Plontz, Francis F. Bullock, Robert E. Moody, L. M. Wright, Nehemiah N. H., Wm. Reynolds, Frank A. White, Henry E. Nelson.



A Greedy Fish.

Such a collection of *scaly* fellows as is here represented can rarely be found. We have not counted the number of faces which can be made out by examination of this singular specimen; whichever way it is turned, new combinations and new features appear. It is the ingenious work of one of our artists. Perhaps he had eaten too heartily of fish for supper, and this nightmare apparition impressed his fancy. How many human faces can you find?



Puzzle for the Eye.

Look carefully at the straight lines that run lengthwise across the engraving, and try to judge how much more widely apart they are at one end than at the other. Probably not one person in ten will make a correct estimate on the first examination. After having measured the distances with the eye, apply a rule or other measure, and the result will probably cause some surprise.

Avarice Outwitted.

The following case is reported as having been decided in one of the courts of law. A wealthy man died leaving the singular will that his executors should have the use of his property until his son, then a young man, should come of age, and that then they should give him such a



(COPYRIGHT SECURED.)

"SIT UP, PONTO!" — Engraved for the American Agriculturist.

Which enjoys it most, Ponto or his playfellows? The whip which one of the children carries, had very little to do with the training of their pet; the pleasant looks of all three show that. The picture tells its own story so well that not a word of comment is needed. Several of our young friends have written to ask the best way of training dogs and other animals. We say, use very little whip but much sugar. Dogs are usually fond of sweets, and when once they understand that the performance of any act will bring a treat, they will not be slow to earn it by obedience. The great point is to make them understand what is wanted. Saying a thing over and over many times will not make it clear to an animal—he does not understand the language. He must be shown again and again, just what is required, while repeating the words of command, until in time he will learn to associate the words with the action, and both with the sugar which he loves. It may sometimes be necessary to use the whip after he knows his duty, but never to teach with; much kindness and great patience will be needed, and for this reason it is well for children to train pets, because of the good effects which it will be likely to have on themselves.

A Dog Story.

Our young readers have, no doubt, often seen dogs carefully bury a choice bone or piece of meat in some out-of-the-way place. They do this to provide against days when the supplies may run short, or the cook be cross, or some other trouble may interfere with their regular rations. A gentleman at the West relates that his dog had many deposits of this kind, and when any strange car came into the neighborhood, the prudent animal would carefully guard his stores to prevent their being stolen. One day, however, a lean, half-starved specimen came

fully trotting by, when the provident dog ran up to him, soon made his acquaintance, and won his confidence, as dogs know how to do, and then led him to one of his hoards, dug out a good bone, and watched him with great satisfaction while he gnawed it. He then showed him another deposit, which satisfied his appetite, and he went joyfully on his way. This is a pretty tough dog story, but is vouched for by the gentleman who relates it.

About Wearing Jewelry.

Jewelry of some description has been worn in every age from the earliest times and by all classes. The Israelites in the wilderness gave freely of the ornaments which they had borrowed of the Egyptians, to aid in making the sacred utensils of the Tabernacle. Earlier than this, Rebekah received presents of jewelry from her suitor, Isaac. The most savage tribes manufacture these articles for personal adornment from shells, stones, or wood, hanging them from their necks, around their arms and fingers, or thrusting them through their ears, noses, or lips; and in the highest civilization the pageantry of kings is not thought complete without the costly and flashing jewels which adorn the crown or decorate the person of the monarch. The passion for this kind of ornament was, perhaps, never more prevalent than at the present time, and in this country. Immense factories with thousands of workmen are employed in supplying the demand for rings, pins, bracelets, necklaces, etc., etc. The swindling fraternity have reaped a rich harvest by gift enterprises, lotteries, and other schemes, in which glittering jewelry formed the cheap but attractive bait. Now we do not think it sinful to wear ornaments. It is right to make one's self look beautiful. It gives pleasure to all to see handsome features and to see them properly

adorned. But the point is that jewelry does not usually add to good looks. If one is fair by nature, then glittering gold and shining gems attract attention away from the person; if homely, then the features are made still uglier by contrast. Besides this, beauty in man or woman consists in something more than mere shape of the features. The expression, showing the spirit dwelling within, is the true test of beauty. Passion, hypocrisy, meanness, cowardice, slyness, vanity, or any disfigurement of the soul, will mar the comeliest features. A display of outward ornament usually heightens the expression of the vanity which might otherwise escape notice, and thus defeats the object it was intended to secure. A simple, unostentatious pin or ring, the gift of friendship, may indicate affectionate remembrance, and thus be truly ornamental. The rule may be laid down that what is worn merely because it is showy always detracts from good looks in the estimation of a person of true taste.

Comical Command.—A gentleman in this city, well known for his irrepressible comicallities and his warm love of children, was once disturbed by the uneasiness of his little daughter while reading the Bible at family devotions. Closing the book and looking severely at the offender he said to her very sternly, "Mary, sit down in that corner, and don't you dare to wink loud!"

CHILDREN'S TALK sometimes contains amusing mistakes. A friend recently overheard the following in the street. A little girl was playing with a very small dog, and calling the attention of one of her playmates to the diminutive size of the animal. The reply from the four-year-old was: "My sister's got a good deal little *doggy* than that." The meaning was plainer than the language.

**TWENTY-FIFTH
ANNUAL STATEMENT
of
THE MUTUAL LIFE
INSURANCE COMPANY
of New York.**

F. S. WINSTON, PRESIDENT.

FEBRUARY 1st, 1868.

Net Assets, January 31, 1867. \$17,689,296 97

RECEIPTS.

For Premiums, Annuities, Interest,
and Rents 10,125,047 01

\$37,812,344 58

DISBURSEMENTS.

Claims by death..... 914,337 73
Claims on Endowments matured..... 85,300
Cash Dividends to Policies..... 2,517,114 02
Surrendered Policies..... 296,687 32
Annuities..... 14,678 09
Commissions and commutations
of future commissions..... 925,037 29

Exchange, Postage, Advertising,
Printing, Stationery, Medical
Examiners, Salaries and
Law Expenses..... 358,610 01
Taxes and sundry Office Expenses
Office Rent Sinking Fund..... 106,921 87
20,000 5,149,892 44

Net Assets February 1st, 1868..... \$22,662,452 14

Invested as follows:
Cash on hand and in Bank..... 1,504,770 93
Bonds and Mortgages..... 15,176,945 63
Government Stocks..... 5,093,169 78
Real Estate..... 937,835 12
Balances due from Agents..... 99,791 72

\$22,662,452 14

Add:
Interest accrued but not due..... 173,113
Interest due and unpaid..... 4,292 45
Value of Future Commissions
noted as above..... 547,253 11
Premiums deferred semi-annual
and quarterly..... 1,015,568 53
Premiums due (principally for
Policies issued in December
and January)..... 386,735 63
Market value of Stocks in excess
of cost..... 499,942 60 2,656,567 41
Gross Assets February 1st, 1868.... 23,319,319 55
Increase in net cash assets for the
year..... 5,023,153 17

THE ASSETS ARE THUS APPROXIMATED:

Net Reserve at 4 per cent. Interest
for Re-insurance..... 2,012,285 67
Claims by death, including addi-
tional unpaid (not yet due)..... 123,965 81
Premiums paid in advance..... 45,965 23
Dividend of 1868, Cash value..... 2,370,317 86
Unpaid surplus on basis of four
per cent..... 767,664 99
25,319,319 55
Total Number of Policies Issued
during the year..... 19,460
Amount insured thereon..... \$62,232,606
Number of deaths during the year..... 301
Amount insured thereon..... \$571,200
Total number and amount of Pol-
icies in force..... 52,384 194,211,898 36

RICHARD A. MCCURDY, VICE-PRESIDENT.

SHEPPARD HOMANS, ACTUARY.

LEWIS C. LAWTON, ASSISTANT ACTUARY.

JOHN M. STUART, SECRETARY.

FRED'K. SCHOEDER, Ass't SECRETARY.

WILLIAM BETTS, LL.D.,

HON. LUCIUS ROBINSON, } COUNSEL.

HON. HENRY E. DAVIES, }

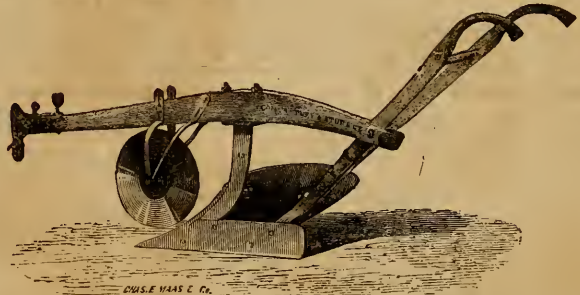
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ISAAC L. KIP, M.D., } MEDICAL EXAMINERS.

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PRIZE SILVER MEDAL AT THE PARIS EXPOSITION,
1867.**

**AWARDED THE
PRIZE GOLD MEDAL AT THE GREAT NATIONAL TRIAL OF PLOWS,
At UTICA, September, 1867.**

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CELEBRATED SOLID CAST STEEL PLOWS.**



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Unscrupulous Dealers occasionally sell a worthless Swiss imitation. To avoid imposition, buyers should always demand a certificate of genuineness.

For sale by all respectable dealers.

Ask for a Waltham Watch, and take no other.

IT IS THE BEST. IT IS THE CHEAPEST.

Send Stamp for priced Catalogue of new books on

ARCHITECTURE.

GEO. E. WOODWARD, 191 Broadway, New-York.

Fire Engine for Every Household.

A superior Green-house Syringe, light Force Pump and Garden Engine in one, for \$3. "In our opinion exceeds anything of the kind heretofore invented."—Ed. N. E. Farmer, "Superior to any other instrument of which I have any knowledge for Green-house use, destroying insects on trees and plants, and all the purposes for which Garden Pumps or Syringes are wanted."—Knox, Pittsburgh, Pa. "Something no household should be without, and indispensable for Green-house use."—F. K. PUGH, Bloomington, Ill. For Circulars and Price List send two-cent stamp to

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Wilson Early.....\$3.00 \$7.00 \$12.00 \$20.00
Kittittany.....\$1.75 \$3.25 \$5.00 \$15.00
Extra Offer: To the 1st ten orders received which mention having seen this advertisement, and which amount to over \$5 each, we will send double the number of cuttings ordered. J. H. FOSTER, Jr., White Horse P. O., Camden Co., New Jersey.

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FOR 1868. An original and highly interesting year-book for the Farmer, Gardener, and Fruit-grower. 64 pages, well illustrated, and neatly bound, price 25 cts. Preferring to give the profits to the consumer, we will send single copies, post-paid, for 15 cts. (wholesale price). "It is well worth 100 times its cost."—*Continental Times*. Address PUBLISHER NORTH-WESTERN FARMER, Indianapolis, Ind.

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For baking French Rolls, Gems, Pop Overs, Corn Bread, &c. The best article in use; see editorial notice page 25 in Jan. No. of *Agriculturist*. Manufactured and for sale by the owners of said patent, RUSSELL & ELWIN MANF'G CO., New Britain, Conn., and at their warehouses in New York, Philadelphia, Boston, Baltimore, and San Francisco.

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AND MELODEONS.
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BUFFALO, N.Y. CHICAGO, ILL.**

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The attention of all who are interested in the culture of **Flowers and Vegetables** is invited to our large and well selected assortment of the above, comprising the newest and most approved varieties both of European and Home production, the quality of which cannot be surpassed. For a list of which see our

New Illustrated Seed Catalogue and Amateurs' Guide to the Flower and Kitchen Garden.

The **Fourteenth Annual Edition**, enlarged and improved, contains 132 pages of closely printed matter. Beautifully illustrated with upwards of **One Hundred Engravings**, and a description list of **Twenty-five Hundred varieties of Garden, Field, and Flower Seeds**, including all the leading novelties, with explicit directions for their culture; also a list of

One Hundred and Fifty Choice varieties of French Hybrid Gladioli.

Embracing many new sorts not before offered in this country—with many other **Summer Flowering Bulbs**, consisting of **Amaryllis, Tuberoses, Tigrids, Lilies**, etc. To which is added a list of the most desirable varieties of **Small Fruits, Bedding Plants**, and much other useful information upon the subject of gardening generally. A copy will be mailed to all applicants upon receipt of **25 Cents**.

Our **New Illustrated Plant Catalogue** will be published early in March, and will contain a list of many **New and Rare Plants**; also a descriptive list of all the leading varieties of **Dahlias, Verbenas, Cannas, Geraniums**, and other **Bedding Plants**. Price 10 cents. A copy of each will be mailed to our Regular Customers without charge.

We would invite particular attention to the following **Collections of Seeds**, as well as to the **special varieties** enumerated, the purity and vitality of which cannot be excelled, all of which, with the exception of those noted, will be **mailed postpaid to any address in the Union**, (excepting those upon the Overland Mail Route), upon receipt of price affixed.

Collections of Flower Seeds by Mail.

The following collections have been sent out from our establishment for the past 14 years, and are now favorably known in every part of the country. They contain the most showy varieties in our large assortment, with full directions for culture. Each packet contains a mixture of the different colored varieties of its species, so that a greater display can be made at a much less price than when ordered in separate packets. Those unacquainted with Flowers, as well as the experienced cultivator, may order without fear of disappointment.

No. 1—contains twenty choice varieties of Annuals..... \$1.00
No. 2—contains twenty choice varieties of Biennials, Perennials, and Perennials..... 1.00
No. 3—contains ten extra varieties of Annuals and Perennials, embracing many of the new and choice varieties in cultivation..... 1.00
No. 4—contains five very choice varieties, selected from *Prize Flowers*, of English Pansies, German Carnation and Plectio Pinks, Verbenas, Trifolium, French Aspers, Double Hollyhocks..... 1.00
Any one remitting \$3.00 will receive the four assortments, postage free.

No. 5—contains fifteen very select varieties of Green-house seeds..... \$3.00
No. 6—contains one hundred varieties of Annuals, Biennials, and Perennials, including many new and choice varieties..... 5.00
No. 7—contains fifty varieties of Annuals, Biennials, and Perennials..... 2.50
No. 8—contains twenty varieties of Hardy Annuals, Biennials and Perennials, for sowing in Autumn..... 1.00

The seeds contained in the above assortments are of our own selection. Purchasers who prefer to make their selection from the Catalogue will be entitled to a discount proportionate to the quantity ordered.

GIANT ASPARAGUS ROOTS BY MAIL.

Extra, strong, one year old Roots, carefully packed, and mailed, post-paid, at \$1.25 per 100; \$6.00 for 500; \$10.00 for 1,000.

We earnestly request our correspondents to give their Name, Post-office Address, County and State, distinctly written in full. All orders should be addressed either to

Collections of Kitchen Garden Seeds.

A COMPLETE ASSORTMENT OF VEGETABLE SEEDS FOR ONE YEAR'S SUPPLY, FOR A LARGE OR SMALL GARDEN.

The following Collections are made up in the most liberal manner, care being taken to give a sufficient quantity of all the finest varieties and most useful sorts of Vegetables required in the Kitchen Garden.

Assortment No. 5, contains 55 varieties, \$2.50
" No. 6, contains 33 varieties, 2.00
" No. 7, contains 15 varieties, 1.00

The above are prepared expressly for sending by mail, and will be sent post-paid, upon receipt of prices annexed. Larger Collections, which can be safely sent by express (freight paid by purchaser), to any part of the country, as follows:

No. 1, \$3.00; No. 2, \$15.00; No. 3, \$10.00; No. 4, \$5.00
For a list of the contents of each Collection, see Catalogue, pages 93 and 100.

Bliss' Improved Long Orange Carrot.

This variety originated in Massachusetts several years since, and it is rapidly gaining favor wherever known, and is now almost the only variety grown by farmers in this country. It resembles the "Long Orange" in shape, but is superior to it in every respect, being larger, better flavored, of a deeper orange color, and more sure to produce a crop. Post-paid by mail as follows: 1 oz. 25 cts.; 4 ozs., 50 cts.; 8 ozs., \$1.00; one pound, \$2.

Connecticut Seed Leaf Tobacco.

Be Sure and Get the Best.

A superior lot raised by special contract with one of the most successful cultivators in the Valley of the Connecticut. Packets with full directions for culture during and packing, mailed to all applicants at following prices: 1 oz., 25 cts.; 4 ozs., \$1.00; 1 pound, \$2.50.

B. K. BLISS & SON, P. O. Box 5712, N. Y.; Or, Draw No. 11, Springfield, Mass.

71 BEST KINDS OF SEED POTATOES, ALSO CHOICE VEGETABLE SEEDS.

See our Advertisement in March No. of Agriculturalist; or send for Illustrated Price Catalogue, *sent free*.

Address L. D. SCOTT & CO., Huron, Ohio.

THE NEW DOUBLE PETUNIA "EDWARD BECH"

FROST & CO., Rochester, N. Y., offer this magnificent Petunia to the public for the first time.

This variety we consider the handsomest and largest ever offered, and is so considered by all who have seen it. It is a fine acquisition to the flower garden, and none should be without it.

Price, \$1 per Plant; \$9 per Dozen. Colored lithographs of the above plant will be sent to all applicants on receipt of 25 cts. for each, and to purchasers of one dozen plants one plate gratis.

Address FROST & CO., Genesee Valley Nurseries, Rochester, N. Y.

Choice Seeds from Rhode Island.

Barrett's Early Cabbage, as good as Brunswick, price 25 cts. per package, \$1 per doz. Brunswick, raised by John Fowler, \$1 per doz. Jersey Wakefield 50 cts. per doz. \$5 per lb. Green Savoy 20 cts. per doz. \$1 per lb. White French Turnip, the purest in the country, \$1 per lb. Red and Yellow Onion. Blood Turnip Red, Early White Dutch Turnip, Late Island Turnip, Horn and Orange Carrot, Asylum Sweet Corn, Early Narragansett Sweet Corn, and various other seeds of our own growing, for which we were awarded the first premium at the New England Fair in the past season. All Seeds warranted. Send orders to W. E. BARRETT & CO., Providence, R. I.

Pure Sorgo Seed, warranted. Hand Garden Cultivator, warranted to save the labor of four men. Send for Circular, BLYMYER, NORTON & CO., Cincinnati, O.

Lilium Auratum. New Golden Rayed Japan Lily At Greatly Reduced Prices.

We are happy to inform our friends that we have received a large consignment of this magnificent Lily, only six weeks from Japan—in splendid condition, which we can offer at greatly reduced prices. This species is reputed to be the most beautiful of all the lilies, and its wonderful proportions and peerless symmetry of bloom surpass all accounts given by travelers—and plants exhibited since its introduction into this country have more than realized the great anticipations of its wonderful features. The individual blossoms are from eight to ten inches in diameter, of delicious fragrance, ground color of pearly white, which is often suffused with a golden tint, and elegantly strided over with spots of rich chocolate crimson, with a golden ray or stripe running through the center of each petal. It is perfectly hardy, besides being admirably adapted for pot culture. Strong Flowering Bulbs..... \$1.70 each; \$12.00 per dozen. Second size, do. do..... \$1.00 " 9.00 " " The Trade supplied upon liberal terms.

EARLY ROSE POTATOES.

Our stock of this valuable Potato being exhausted, we shall not be able to fill any more orders until the 1st of May. For a list of other popular varieties see our advertisement in March Agriculturalist.

Seeds for Hedges.

Barberry—very hardy, produces a fine, compact hedge—valuable alike for its fruit and security against intrusion from man or beast. 1 oz., 4 cts.; 4 oz., \$1.50, pound, \$5.00. **Honey Locust** or **Three Thorns**—excellent. Very hardy, affords ample security against all intruders, well adapted for the Prairies, 1 oz., 4 cts.; 4 oz., 25 cts., pound, \$1.00. **Osage Orange**, 1 oz., 15 cts.; 4 oz., 35 cts., pound, \$1.00.

B. K. BLISS & SON, P. O. Box 5712, N. Y.; Or, Draw No. 11, Springfield, Mass.

LANDRETH'S WARRANTED GARDEN SEEDS

Private Families who aim to raise vegetables of the best quality only, need not be reminded "figs do not grow on thistles," nor that from good seed alone can good vegetables be obtained.

Seeds may, indeed, grow freely enough, but unless they prove good in every respect, it were better they had not grown at all. The seeds offered by us being mainly the produce of Bloomdale, raised under our own personal supervision, with the aid of years of practical experience, we are enabled to speak with entire confidence as to their quality, and of the reasonable probability of satisfactory results. We have but few "Xenoties" to offer. Our experience (obtained at some cost) is that out of the multitude of that class of vegetables advertised for sale, in most cases the good are not new, and the new are not good—substantial, staple, well-known sorts are in the main the most reliable.

Purchasers who do not reside within ready access of the city, nor near merchants or druggists who vend our seeds, can be supplied by mail, post-paid. Priced Catalogues, for family use, with the **FAMILY REGISTER** for 1893 (abounding in useful hints), will be mailed, without charge, to all who apply enclosing a 5-cent stamp.

DAVID LANDRETH & SON,
Nos. 21 & 23 South Sixth-st.,
PHILADELPHIA.

CHOICE GERMAN FLOWER SEEDS IN COLLECTIONS, the finest assortment ever offered. Pre-paid by mail. Catalogues to any address. By the 100 or 1,000 papers to the trade. Trade Lists now ready. B. M. WATSON, Old Colony Nurseries and Seed Establishment, Plymouth, Mass.

Flower Seeds! Flower Seeds!! FROST & CO.,

Genesee Valley Nurseries, Rochester, N. Y.,

Have just received from Europe a fine collection of Flower Seeds, which they offer for the Spring of 1893.

Catalogues sent to all applicants upon receipt of Postage Stamp. Address, FROST & CO., Genesee Valley Nurseries, Rochester, N. Y.

Knox Fruit Farm and Nurseries. 150 ACRES devoted to SMALL FRUITS.

The New York and Philadelphia Markets furnished with their choicest Strawberries from our establishment.

Descriptive and Illustrated Catalogue of 61 Pages furnished for 10 cts.

J. KNOX
Box 155, Pittsburgh, Pa.

SQUASHES AND ONIONS.

I have written two very thorough works, one on the cultivation of each of these vegetables, in which the directions given for every step of the process for selecting soil, preparing, manuring, planting, protecting from insects, weeding, gathering, ripening, storing and marketing the crop, are so very minute, that the new beginner can be equally successful with experienced growers. Each work is fully illustrated. Sent to any address, and warranted to reach the purchaser at 50 cents each. *If you mention them in your orders, we are not put to any more trouble, I will refund it gratis.* Catalogues of choice vegetable seed, over one hundred varieties, which I myself grow, sent free to all who send warrants to JAMES J. H. GREGORY, Marblehead, Mass.

CROSBY'S EARLY SWEET CORN.

This new variety of corn is early, sweet, and large; unlike most early varieties it averages twelve rows and well filled. It is taking the place of all others, giving great satisfaction. Our stock grown from the original. Price per pkt. 15 cents. Address, HORTON Hall, Boston, Mass.

SPRING GARDEN SEEDS.

The following are selections from **Thorburn's Catalogue** for 1868, constituting the choicest of their sorts.

£7¹/₂ If ordered by mail, add 8cts. per lb. for postage.

The five best Beans are:	per ct.	cts.
Early Rachel, Bush.....	40	40
Black Wax, Bush, (one yellow pod).....	50	50
Refugee, Bush.....	40	40
Horizontal, Pole.....	50	50
Black Wax, Pole (fine yellow pod).....	55	55

The two best Beets are:

Carter's St. Oyst.	per lb.	\$1.00....	per oz.	45	cts.
Early Blood Turnip.....	"	1.00....	"	45	"

The five best Cabbages are:

Early King of Dwarf.....	per lb.	\$3.00....	per oz.	75	cts.
Early Winingstadt.....	"	5.00....	"	40	"
Early Oxheart.....	"	5.00....	"	50	"
Drumhead Savoy.....	"	5.00....	"	40	"
Large Flat Dutch.....	"	4.00....	"	40	"

The two best Carrots are:

Early Scarlet Horn.....	per lb.	\$1.25....	per oz.	15	cts.
Long Orange.....	"	1.25	"	15	"

The three best Cauliflowers are:

Extra Early Erfurt.....	per packet,	25	cts.
Early Paris.....	"	31	"
Thorburn's Nonpareil.....	"	1.00	"

The three best Celerys are:

Early Dwarf White.....	per ct.	75	cts.
Early Dwarf Crimson.....	"	50	"
Dickson's Mammoth White.....	"	40	"

The four best Corns are:

Early Dwarf Sweet.....	per ct.	40	cts.
Triable's Improved.....	"	50	"
Stowell's Evergreen.....	"	30	"
Striped Leaved Japan.....	per ct.	40	"

The two best Cresses are:

Extra Curled.....	per lb.,	75 cts.	per oz.,	10 cts.
Broad Leaved Winter.....	"	\$3.00....	"	50 "

The three best Cucumbers are:

Early Russian.....	per lb.	\$1.00....	per oz.	20	cts.
White Spined.....	"	1.50....	"	15	"
Long Green.....	"	2.00....	"	30	"

The best Kohlrabi is:

Early White Vienna.....	per lb.	\$1.00....	per oz.	40	cts.
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The four best Lettuces are:

Early White Foreing.....	per lb.	\$3.00....	per oz.	50	cts.
Tamishol or Boston.....	"	4.00....	"	40	"
Wheeler's Tom Thumb.....	"	5.00....	"	80	"
Ice Drumhead.....	"	2.50....	"	30	"

The three best Melons are:

Early White Japan.....	per lb.	\$5.00....	per oz.	40	cts.
Fine Netting.....	"	1.50....	"	20	"
Ice Cream Water.....	"	1.50....	"	15	"

The three best Onions are:

Early tied.....	per lb.	\$2.00....	per oz.	20	cts.
Yellow Danvers.....	"	2.00....	"	20	"
White Portugal.....	"	3.00....	"	20	"

The best Parsley is:

Extra Curled.....	per lb.	\$1.50....	per oz.	15	cts.
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The best Parsnips is:

Sutton's Student (fine flavor).....	per lb.	\$1.50....	per oz.	30	cts.
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The six best Peas are:

McLean's Little Gem (1 foot high).....	per qt.	90	cts.
Carter's First Gun (2 1/2 feet high).....	"	50	"
McLean's Advance (2 1/2 feet high).....	"	60	"
Hair's Dwarf Mammoth (2 1/2 feet high).....	"	60	"
Nonpareil Marrow (3 feet high).....	"	60	"
McLean's Princess Royal (3 1/2 feet high).....	"	50	"

The four best Radishes are:

French Breakfast.....	per lb.	\$1.50....	per oz.	15	cts.
Early Scarlet Turnip.....	"	1.50....	"	20	"
Long Scarlet.....	"	1.00....	"	30	"
Scarlet Chineser Winter.....	"	3.00....	"	30	"

Raphanus caudatus (edible pot variety)..... per packet | 25 | cts. |

The two best Spinages are:

Large Flandre.....	per lb.,	75 cts.	per oz.,	10 cts.
Round Leaved.....	"	75 "	"	10 "

The three best Squashes are:

Summer Crookneck.....	per lb.	\$1.25....	per oz.	10	cts.
Yokohama, Winter.....	"	4.00....	"	40	"
Hubbard, Winter.....	"	2.00....	"	50	"

The four best Tomatoes are:

Large Lie Smooth.....	per lb.	\$1.00....	per oz.	30	cts.
Fairy Island.....	"	4.00....	"	20	"
Cock's Favorite.....	"	4.00....	"	30	"
Valencia Cluster.....	"	4.00....	"	30	"

The four best Turnips are:

Red Top Strap Leaf.....	per lb.	\$1.00....	per oz.	10	cts.
White French.....	"	1.00....	"	10	"
Yellow French.....	"	1.00....	"	10	"
Improved Rutabaga.....	"	1.00....	"	10	"

Also, apply for **Descriptive Catalogue** containing directions for the cultivation of vegetables.

J. M. THORBURN & CO.
15 John-street, New York.

Early Rose Potatoes.

Perfection Attained at Last.

GEO. W. BEST,

Utica, N. Y.,

Has all the Stock which will be offered for sale before Fall of 1868.

The "Early Rose" is a seedling of the "Garnet Chili," originated in 1851 by **ALBERT DIEZEE**, Esq., an intelligent farmer, and the whole stock was sold by him to D. S. Heffron, (of Utica, N. Y.), the well-known disseminator of the "Goodrich Seedlings."

In a letter to Messrs. B. K. Bliss & Son, of New York, Mr. H. says of the "Early Rose": "It has uniformly ripened ten days earlier than the 'Early Goodrich,' produces less small tubers, is equally healthy, and productive as that justly celebrated variety, and its superior in table quality. It is the best early potato that I have ever grown from, all things considered." "Skin thin, touch of a dull bluish color, flesh white, solid and brittle; boils through quickly; very mealy."

Dr. John P. Gray, Superintendent of the N. Y. State Lunatic Asylum, says:

"Last Spring, (1867), I received from D. S. Heffron a quantity of his new Vermont Seedling Potato called the Early Rose. It was planted the last of May, in alternate rows with the Early Goodrich, in the same kind of soil and treated exactly alike. It came up rank, grew more rapidly than the Early Goodrich, and flowered full two weeks before that variety. It began to ripen its large, thickly growing leaves twelve days in advance of the other, and was fully ripe and fit for digging least ten days before the Early Goodrich. We carefully measured four rows of each kind across the piece, and found the yield quite equal to the Early Goodrich; in health it was also its equal, while it exceeds the other in table quality. I consider it the best very early sort with which I am acquainted."

JOHN P. GRAY.

(Dr. Gray has none of the stock for sale, having only raised a few for Mr. Heffron.)

CARD FROM D. S. HEFFRON, Esq.

To Whom it may Concern.

Having recently sold nearly my entire stock of the "Early Rose Potato," to **JOHN L. CONOVER** and **STACY P. CONOVER**, they have sent me an order to deliver a portion of them to **GEO. W. BEST** (of Utica, N. Y.).

D. S. HEFFRON.

GEO. W. BEST has purchased of Messrs. **JOHN L. & STACY P. CONOVER**, of Monmouth County, New Jersey, a part of their stock of "Early Rose Potatoes," at the enormous price of **Twenty Dollars (\$20) per bushel**, and proposes to send them out in poned packages, as premiums to those purchasing Grape Vines of him. The following will convince the public that \$20 per bushel is the actual price paid.

City and County
of
New York.

JOHN L. CONOVER and **STACY P. CONOVER**, of Monmouth Co., New Jersey, being duly sworn, depose and say that on this 21st day of February, 1868, they sold to **GEO. W. BEST** a part of their stock of "Early Rose Potatoes," at the cash price of \$20 per bushel.

Sworn before me this 21st day of February, 1868.
J. WILLIAMS GLEASON, Notary Public, New York.

I have a very large stock of Choice **Native Grape Vines** (consisting of the most desirable varieties, among which are **Adirondack, Allen's Hybrid, Concord, Creveling, Delaware, Diann, Union Village, Hartford Prolific, Rogers' Hybrids, Iona, Israella, &c.** &c.), which I intend to send out in connection with the "Early Rose."

TERMS:

For \$5 (invariably to be sent with the order.) I will send **Ten Choice Grape Vines** from the above list (reserving the right of selection for myself, but endeavoring to suit purchasers as far as possible) and **One Pound of "Early Rose Potatoes"** all to be securely packed, and sent by mail, postage prepaid.

INSTRUCTIONS FOR PLANTING.

By cutting into single eyes, and planting but one eye in a hill, one bushel may be readily raised from a poned, and will have a better selection for myself, but will endeavor to suit purchasers as far as possible) and **One Pound of "Early Rose Potatoes"** all to be securely packed, and sent by mail, postage prepaid.

Not more than five packages sent to one address.

No "Early Rose" for sale in quantity at any price, and only in connection with the Vines.

No orders accepted unless accompanied by the Cash.

Orders will be looked in order as received, and Potatoes and Vines shipped as early in the Spring as the weather will permit. Order early, as the stock is limited.

Address

GEO. W. BEST,
Utica, N. Y.

LANDRETH'S GARDEN SEEDS

Speak their own praise wherever planted.

If the reader of the above wishes to **TEST Landreth's Seeds** in comparison with the best he has ever used, and cannot conveniently obtain them from merchants or druggists of his neighborhood, a package of 50 papers, judiciously assorted, sufficient for the use of a small family, will be mailed, post-paid, and safe carriage insured, on the remittance of \$3.

DAVID LANDRETH & SONS,
Nos. 21 & 23 South Sixth-st.,
PHILADELPHIA.

JOHN R. & A. MURDOCH,
Nurserymen, Florists and Seedsman,
No. 112 SMITHFIELD STREET
PITTSBURGH, PA.,

Opposite the Post-Office.
Are prepared to fill orders for Fruit and Ornamental Trees, Grape-vines, Roses, Evergreens, etc. Vegetable and Flower Seed of best quality. Onion Sets, Early Goodrich, Marlboro, and other varieties of Seed Potatoes. Garden Implements and Greenhouse Plants. We will send by mail, when desired, all orders for seeds to the amount of one dollar or upwards, except Corn, Beans and Peas. Catalogues sent on application and all orders promptly attended to.

A Sixty Pound Cabbage!!

As the original introducer of the **Marblehead Mammoth Cabbage**, I offer the public seed grown by myself from the choicest specimens of the purest stock.

This Cabbage has been grown in nearly every State in the Union, weighing from 35 to 60 lbs. For the past few years it has been the standard variety at almost every Agricultural Fair in the United States and Canada, and every public may rely upon my continued care to keep the seed pure from all admixtures and fully up to its previous standard. The seed package has a fine engraving of this remarkable Cabbage—with very full directions for culture in all Seed post-paid. Send addresses for 25 cents per package, five packages for \$1; or 100 packages for \$7.00.

JAMES J. H. GREGORY, Marblehead, Mass.

NEW CABBAGES—NEW SHORT-STEMMED
Brunswick, or Potter's Brunswick, New Selwchfort, White, or 160-weight Cabbage, white, solid, extra, Clarke's new extra Early Nonpareil, new extra Early Erfurt, each 25 cts. the five for \$1, pre-paid by mail. Extra Early Erfurt Cauliflower, 50 cts. each. Cedar Hill Tomato, 25 cts. With all other new and standard Garden and Flower seeds. 25 cents by mail, pre-paid for \$1. Catalogues to any address. Seeds in pounds, sent by mail, for the trade, by the 100 or 1000—the most judicious selection ever offered in this country. Wholesale Trade Lists now ready. Agents wanted.

B. M. WATSON, Old Colony Nurseries and Seed Establishment, Plymouth, Mass.

Potter's Improved Brunswick CABBAGE.

This Improved Cabbage is of fine quality, very flat and hard, measuring from one foot to eighteen inches in diameter, or 160-weight Cabbage, white, solid, extra, Clarke's new extra Early Nonpareil, new extra Early Erfurt, each 25 cts. the five for \$1, pre-paid by mail. Extra Early Erfurt Cauliflower, 50 cts. each. Cedar Hill Tomato, 25 cts. With all other new and standard Garden and Flower seeds. 25 cents by mail, pre-paid for \$1. Catalogues to any address. Seeds in pounds, sent by mail, for the trade, by the 100 or 1000—the most judicious selection ever offered in this country. Wholesale Trade Lists now ready. Agents wanted.

B. M. WATSON, Old Colony Nurseries and Seed Establishment, Plymouth, Mass.

Boston Market Dwarf Celery.

The very best in cultivation, being very solid, and of compact dwarf growth. The Boston market gardeners will use no other. Price, 25 cts. per packet, or \$1 per ounce. Also,

IMPROVED BRUNSWICK CABBAGE SEED, of our own growing. This variety was first introduced by Mr. **Shigel**, who, 25 or 50 cents per packet, or \$1 per ounce, free by mail. We offer a large and well selected stock of all the leading varieties of seeds. Send for a Catalogue. Write your address plain.

A. SCHLEGEL & CO., 10 South Market-st., Boston, Mass.

Correspondence in English or German. **—E—**

Marblehead Mammoth Sweet Corn.

The ears are of an enormous size, often weighing between two and three pounds, very sweet and excellent for table use. My specimens (a 100 Corn recently took the First Premium at the 2nd of the Annual Fair of the New England Horticultural Society. Per package, 25 cents, or five packages for \$1.00. My seed Catalogue gratis to all.

JAMES J. H. GREGORY, Marblehead, Mass.

HOP ROOTS

For sale in quantities to suit purchasers.

C. G. CRANE & CO.,

Seed and Agricultural Warehouse,

NO. 70 BROAD-ST., NEWARK, N. J.

Complete Manual on the Cultivation of Hops, price 40 cts., mailed on receipt of price.

HORSE-RADISH SETS.

A few very fine ones for sale low. Address,
WM. R. QUIMBY, 51 Pearl-street, New York.

FLOWER SEEDS. FLOWER SEEDS.

After cultivating over one thousand varieties of Flower Seeds, I have selected about one hundred kinds of the most hardy, showy, and attractive, of which I will furnish, newly put up, any 50 kinds on the list for \$1, and send by mail with postage prepaid. Send for a Catalogue.

G. R. GARRETSON, Flushing, N. Y.

HAAGE & SCHMIDT,

Nursery and Seedsman, Erfurt, Prussia.

Send stamps for catalogues to Messrs. **AUSTIN, BALDWIN & CO.**, 52 Broadway, New York.

HALL'S NEW BRACKEN PERPETUAL JAP.
AN EXCELLENT HONEY-SUCKLE and the New Forget-me-Not, Empress Elizabeth. See my advertisement in the February and March numbers of this Journal. **B. M. WATSON**, Plymouth, Mass.

Advertisements, to be sure of insertion, must be received **BEFORE** the 5th of the preceding month.

TERMS—(cash before insertion):

Ordinary Pages, \$1.50 per line, Less than 4 lines, \$5.
Open Pages (without cutting), \$2 per line.
Business Notices—Page next to reading matter and last page—\$4.50 per line of space, each insertion.

Agricultural & Horticultural Headquarters,

A Perpetual Exhibition

OF
IMPLEMENTS, MISCELLANEOUS ARTICLES, etc.; also, TREES, the BEST VINES, FLOWERS, Etc., Etc., at the

Agriculturist Building, 245 Broadway.

The undersigned has taken THREE LARGE HALLS in the above building for the above purpose, for conducting the large business of **WHITLOCK'S ALL NURSERY** in ONE, and for the publication of **WHITLOCK'S HORTICULTURAL ADVERTISER** a Monthly, \$1.50 per annum, with Concord and Iowa Grape-vine and Kitzbinger Blackberry for nothing; fine plants, sold, Single copies 15 cents.
* * * Dealers, Patentees, etc., desiring room for articles and curiosities, Nurserymen wishing to show samples, All Wanting to furnish, and all wishing further information, send for Circulars and specimen Copy of Advertiser to
L. L. WHITLOCK, 245 Broadway, New York.

The Premium Harvester of America.

**BUCKEYE
MOWER & REAPER**

With Self-Rake Attachment.

Awarded the Highest Premiums at the most important Field Trials ever held in any Country.
Circulars forwarded by mail.

Manufactured by **ADRIANCE, PLATT & CO.**,
Manufactory PoKeepsie.
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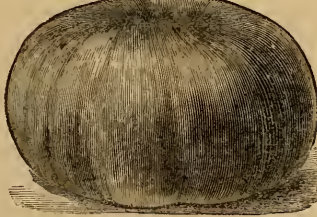
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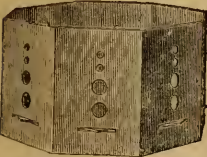
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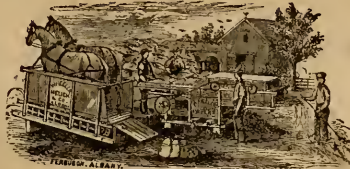
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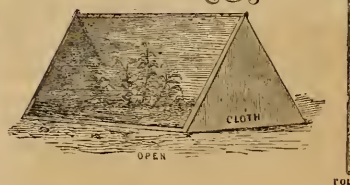
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Manufactured under the French Patent, of the best material and workmanship, a really first-class article, indispensable to elegant carving or slicing. Sent securely boxed to any address on receipt of the price.
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PARIS, 1867.



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The Improved Bronze Aluminium of which our watches are made is a metal differing entirely from any ever offered to the public. It has seriously occupied the attention of Scientific men, and has not only called forth the eulogiums of the press in consequence of its peculiar properties, but has also obtained a Gold Medal at the Paris Exposition, and even been favorably noticed by receipt of His Holiness Pius IX., authorizing its use in the manufacturing of Church bells. My watches are made of three sizes, all hunting-cases—one small for ladies or kids, and two for gent. The movements are well finished, carefully put together by skillful workmen, and perfectly regulated. I can therefore warrant their excellent time-keepers. These goods being manufactured in my own factory, I am enabled to sell any of the above sizes at the extremely low price of \$16. No genuine unless bearing my trade-mark as above. A full assortment of all kinds of chains always on hand. Goods sent by express, C. O. D., with charges. Not responsible for money sent enclosed in letters. Address JULES D. HUGENIN VILLEMIN, No. 41 Nassau Street, New York.

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In addition to these large cargoes of Black and Japan Teas, the Company are constantly receiving large quantities of the finest quality of Green Teas from the Mayne district of China, which are unrivalled for fineness and delicacy of flavor.

To give our readers an idea of the profits which have been made in the Tea trade, we will start with the American houses, leaving out of the account entirely the profits of the Chinese factors.

1st. The American house in China or Japan makes large profits on their sales or shipments—and some of the richest retired merchants in the country have made their immense fortunes through their houses in China.

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5th. The Speculator sells it to the Wholesale Tea Dealer in lots at a profit of 10 to 15 per cent.

6th. The Wholesale Tea Dealer sells it to the Wholesale Grocer in lots to suit his trade, at a profit of about 10 per cent.

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8th. The Retailer sells it to the Consumer for ALL THE PROFIT HE CAN GET.

When you have added to these **gross** profits as many brokerages, cartages, storages, cooperages and wastes, and add the original cost of the Tea, it will be perceived what the consumer has to pay. And now we propose to show why we can sell so very much lower than other dealers.

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By our system of supplying Clubs throughout the country, consumers in all parts of the United States can receive their Teas at the same price (with the small additional expense of transportation), as though they bought them at our warehouses in this city.

For manner of getting up Clubs, see former advertisement in this paper.

Parties sending Club or other orders for less than thirty dollars had better send Post-office Drafts or money with their orders, to save the expense of collections by express; but larger orders we will forward by express, to collect on delivery.

Hereafter we will send a complimentary package to the party getting up the Club. Our profits are small, but we will be as liberal as we can afford. We send no complimentary package for Clubs less than \$20.

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We warrant all the goods we sell to give entire satisfaction. If they are not satisfactory, they can be returned at our expense within 30 days, and have the money refunded.

The Company have selected the following kinds from their stock, which they recommend to meet the wants of Clubs. They are sold at cargo prices, the same as the Company sell them in New York, at the list of prices will show.

PRICE LIST OF TEAS:

OOLONG (Black), 70c., 80c., 90c., best \$1 30 lb.
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GUNPOWDER, (Green), \$1.25, best \$1.20 per pound.

Consumers can save from 50c. to \$1 per pound by purchasing their Teas of this Company.

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Great American Tea Company,

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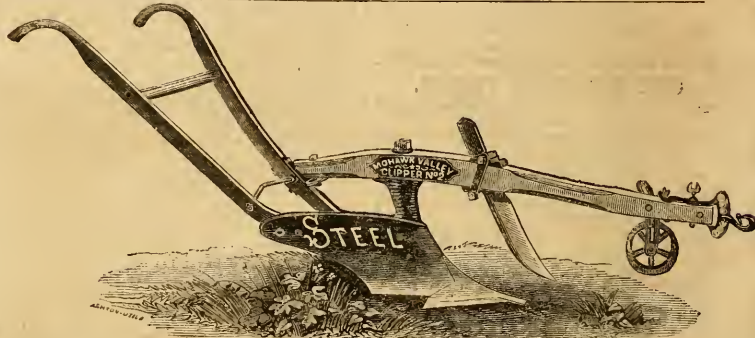
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Warranted to do good work in the most sticky soil.

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CULTIVATORS, CULTIVATOR TEETH, CULTIVATOR POINTS,
BOTH DIAMOND AND OVAL,

HORSE HOES, SHOVEL PLOW BLADES, ALL SIZES, STEEL TEETH FOR
THE CELEBRATED SHARES' COULTER HARROW.

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A ROMAN FARM-YARD SCENE.—FROM A PAINTING BY C. H. POYNDESTRE.—Drawn and Engraved for the American Agriculturist

This spirited scene, so foreign in its whole air, yet so thoroughly agricultural, affords us a fine opportunity to present the chief peculiarities of form, which distinguish the cattle of Italy. A herd of cattle, which had been turned out upon the Campagna to graze, have been collected by horsemen, and, excited by their halloos, have rushed, impetuously following their leader, into the wrong enclosure, to the dismay of the occupants of the quaint court-yard, with its odd old well, and shrine of the Virgin, before which hangs the ever-burning lamp. A race of cattle, for years bred without the admixture of foreign blood, their owners perhaps being guided in the selection of breeding animals more by uniformity of color, size, and strength, than by anything else, will, of necessity, present a similarity of ap-

pearance hardly possible among cattle bred for milk and beef, with a secondary regard to other characteristics. Though domesticated, they are essentially a wild race, because they have been bred in accordance with a sort of natural selection, like that which prevails under the rule of the strongest upon the pampas of South America, or great plains of Texas. Travellers in Southern Europe are familiar with the mouse-colored cattle of Italy. This is not the universal color, by any means, yet it exists extensively, shading into dingy cream-color in parts of Tuscany, and running also into French gray with dark legs and heads. The mealy muzzle familiar to us in the Channel Island breeds is universal. The oxen are marked by immensely long and powerful horns, massive necks, and full dewlaps. The

breed is coarse-boned, and the cattle generally thick-hided and poor feeders. Formerly it is likely greater pains was taken in their breeding, but it is said there is now very little, except in Parma, whence the markets of the world are supposed to be supplied with Parmesan cheese. Here a marked improvement in the milking qualities of the cows is noticed, which is no doubt largely due to the introduction of Swiss blood, and it is accompanied by the usual evidences of a crossed or mixed breed. The artist has thrown great character into his animal figures; and the spirited piece of hy-play between the hay-laden horse, the ass, and the goat, introduced boldly into the center of the picture, is a great success, and does not detract from the effect of the alarming incursion of the cattle.

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AMERICAN AGRICULTURIST.

NEW-YORK, MAY, 1868.

The average temperature grows warmer, and our cold storms are less cold in May than in April, yet they are cold enough. Seeds will rot in the ground; the plows will be dragged through the pasty soil, and mold it into clods, which will stand as mementos of indiscreet haste; sheep will shiver and snuffle, and lambs will die for lack of protection. We judge these and other things will happen, because it always is so. There is no need of their occurring, or very little, at any rate. May is always unreliable, except for storms and showers of rain. Sometimes we have many days of fine, clear, dry weather, but usually everybody is tired of seeing it rain. Proper efforts having been made, there need be little delay in the more important labors. Year by year, one's practices should improve; year by year, the farmer's reasonings should be more accurate, and his judgment better. This month, the great bulk of the corn crop and more than half the potato crop is planted, much wheat is sown, as also roots of all sorts, except those of the turnip family. There must be hands and teams enough to do the work. No more must be included in the plan for the summer's campaign than can be carried out. The plans for daily labor must be sufficient to keep the men employed all the time. It is very desirable to have men about you, who you know will set themselves at work, but it is a poor plan to give them a chance. Always keep men informed as to what work they are expected to do. With the commencement of steady hard work, it is most important to start right with men and teams in the field, and scarcely less with household arrangements. The meals must be promptly ready, if the hands are boarded at the house; if they "find themselves," accuracy of hours must be exacted as far as possible. If one man begins to take liberties, "loafing," coming late, or knocking off early, it is well to get rid of him at once. Such examples are contagious. In all your relations with hired men, "do justly and love mercy," be the best employer they ever had, and so, attach them to yourself and to your service.

Hints about Work.

Last Year's Mistakes are to be avoided. Take time, do all kinds of work thoroughly and well. If not present, let everything ordered to be done pass under your inspection soon after it is finished.

A Watch on the Markets.—We have almost always either something to sell or something to buy; hence it is always well to watch the fluctuation of prices, and take advantage of them, if possible.

Labor will pay.—Hire more labor—take risks of this kind. If work is well planned, and judiciously carried out, the more there is done, the better off you will be. If money at interest pays, that spent for labor ought to pay fifty per cent better.

Working Stock.—Groom horses daily and thoroughly; rub them dry if they come wet to the stable, either from perspiration or rain. Feed regularly, and when cool, give water. It is well to let a pail of water stand where the horse can drink during the night if he wishes to. Oxen should be well brushed off every day likewise. They are healthier for it, and endure more fatigue. If hard worked eight hours a day, it is all that should be expected of oxen. Give long noonnings and good fodder.

Cows.—When there is a good strong growth of grass, turn the cows to pasture, but not before. Calves, wearing muzzles set with nails which are well sharpened, but not slender pointed, may run with their dams without danger of their sucking. Cows "coming in" on full feed, often make more milk than their udders have capacity to retain, if milked but twice a day. Neglect to milk oftener causes not only the loss of a pint or two which leaks out daily, but induces a tendency in the cow to secrete less, entailing a loss through the year.

Bulls.—There are hardly enough good full-blood

bulls of all kinds for farmers in every part of the country to be able to secure their services; but if any State would impose a tax of \$50 a year on every scrub or grade bull kept within its limits, the improvement in stock would be most rapid and remarkable. Never, *never* send a cow to a grade bull. See "Basket" item on keeping good bulls.

Sheep.—Shearing festivals and matches, and meetings at which prizes are offered for heaviest and best fleeces, are the order of the day, and very useful. Sheep breeders should plan to attend some of them. It is best for the sheep to shear them unwashed, and early in the present month, if the weather seems settled. If you are obliged to wash in order to get a fair price for the wool, do so, but expose the sheep as little as possible. Farmers ought to tub-wash their wool, and save the rich, fertilizing liquid. Shelter shorn sheep for a few days, both from scorching sun and from cold. In turning sheep to pasture, if the grass is well grown, exercise caution with valuable animals, for fresh grass is purgative, and the sheep often fall off in flesh for a few days, if changed suddenly from hay to grass.

Spring Grains.—As a rule, it is best to let at least oats and barley go, unless they are sowed by or before the first week in May. Wheat may be put in a little later, on soil very well prepared, but do not neglect the preparation, except on rich land; apply fine manure, plowed under lightly; harrow thoroughly, adding a dressing of guano, superphosphate, fish guano, or bone dust, with the seed.

The Corn Crop.—Be sure of your seed. It should be early, uniform, and adapted to your land. Manure heavily; plant all, except very large kinds, in drills, rather than in hills with rows running both ways. A heavier stand is thus gained, and the ground well filled with roots. Be careful to have the rows very straight, and, to this end, use a marker. North of lat. 40°, be in no hurry about planting—if the crop is in by the 20th or 25th, it is early enough, and replanting will not be necessary.

Broom-corn.—Plant a little earlier than maize, to give it the benefit of a long season, should the warm weather chance to come early. Plant in drills three feet apart, using plenty of seed, and thin out at the second hoeing. Lime and salt, applied to the soil before or at the time of planting, will check the wire-worms, if the crop be put upon a fresh-turned sod. There should be at least twice the number of stalks to the acre that there would be of corn. The culture is very similar, but it requires more care.

Root crops.—For beets, parsnips, carrots, or mangels, the ground must be deep, rich, and mellow. See hints in recent numbers on this subject, and do not fail to put in a good "patch" on as well prepared soil as you have. All the above-named roots may be sown in May almost as well as earlier; carrots and parsnips, particularly, bear late sowing.

Potatoes.—Finish planting before the middle of the month; it is unsafe to delay longer, though, if the season be a wet one, like the last, June-planted potatoes may do tolerably well. Manure at the first or second hoeing with ashes and plaster, lime, or some concentrated manure, cast in small handfuls upon the plants, if backward, or the soil not rich.

Flax and Hemp.—Like the spring grains, it is hardly worth while to sow flax in May—it should be up and high enough to weed. This weeding is done by barefooted or stocking-footed weedeers, children being preferred, who go through in flat-tops, regularly pulling all foreign plants. See *Flax Culture* in our book list. Hemp may be sown, either broadcast or in drills, the latter method being preferable. Put hemp always upon good clean land.

Tobacco.—For minute directions for culture and treatment of this plant, see *Tobacco Culture* of our book list. During the month of May, give the seed-bed great care, weeding, watering, etc.

Sowing Crops.—Sow corn for soiling, using preferably some large-stalked, sweet variety—Stowell's Evergreen or R. I. Asylum. Sow 19 kernels to the foot, in drills about 2½ feet apart. Continue to sow at intervals of about two weeks. No crop is so good for cows in summer, and no other is needed if there is enough of thickly sown corn provided.

Grass and Clover may be sown upon winter and

spring grain early in the month, with very good results. Sown alone on well-harrowed fallow soil, they will do well also. Old "hide-bound" or mossy meadows, full of weeds, or bare of grass, may have new life put into them by a thorough tearing to pieces with a harrow, giving a dressing of 25 or 30 bushels of lime, followed by yard manure or compost, and a fresh seeding with clover and grass.

Weeds.—The warfare begins this month—push it forward. "Whenever you see a head, hit it,"—as is the order of the day at a Donnybrook fair—or better yet, wherever you can find a root, kill it. Remember, weeds may be killed in the seed-leaf by thousands, with the same labor and less thought than will be required to kill them by scores after they have grown. When very small, even stirring the soil in moist weather kills many; when large, unless great pains is taken, though up-rooted, a slight rain will revive them, and they will mature seed as if transplanted for their own good.

Birds and Insects.—Some birds may still be attracted by bird-houses, though most have their nests already built. Do all possible to encourage a feeling of security on their part. They are our best allies in the warfare against insects of all hurtful kinds. Look out for the nests of the tent-caterpillar; destroy when the worms are housed.

Work in the Horticultural Departments.

To the majority of our readers this month will bring a press of work. If the season has been an early one, the young seedlings of some crops will need attention, and if the spring has been a late one, with chilly nights and cold rains, much of the work set down for last month must be done now. In late seasons, nothing is gained by hurrying. Wait patiently until the soil is in working condition.

Orchard and Nursery.

Tree planting is generally over, but where trees have been heeled-in and shaded, they will be in a good condition to set out. Observe notes in previous months on the treatment of nursery trees that have become dried or have started in the packages.

Grafting, if done after growth has commenced, will need care not to injure the trees. The bark at this time easily slips, and there is danger of peeling it off if the limbs are not cautiously managed.

Cions.—Mechan says that if any valuable cions have been left over, that could not be used in grafting, they should be set out like cuttings. This will keep them plump and moist until the bark will run on the stocks, when they may be used to furnish buds for insertion, just as buds of the present season's growth are put in. Worth remembering.

Cultivating the Orchard, especially if a young orchard, is necessary to get a good thrifty growth. Very few will cultivate the ground for the sake of the young trees alone, and it is well to put between the rows of trees such crops as require manure and frequent working. Potatoes, carrots, or whatever will leave the soil in as good condition as to fertility as it was before, may be used.

Mulching cannot be too frequently advocated. It prevents the soil from drying and becoming hard, and keeps down weeds. Almost any litter will do. Leaves from the forest are excellent. Saw-dust is sometimes used, but is objected to by some on the ground that it undergoes fermentation, and becomes sour and injurious to the trees. It will pay to mulch bearing pear trees, if for nothing else but to save the fallen fruit in good condition. Those near the coast use "salt hay." Bog hay, sedges, and the like, will answer equally well. If no mulch can be had, the next best thing is to stir the surface of the soil frequently. The mellow, recently stirred surface soil keeps that below from drying rapidly.

Nursery Trees.—Those budded or grafted last summer will be disposed to throw out suckers from the stock. These are to be rubbed off as soon as they appear; do not let them get large enough to require to be cut away. The same care must be given to small or large stocks grafted this spring.

Seed-beds must be looked to. Young seedlings, even those of our hardiest trees, are very readily injured by the hot sun. The beds may be shaded by a lattice-work of laths, a rough frame covered with evergreen boughs, or any other contrivance may be used that will break the force of the sun.

Insects will begin their work as soon as there is any young growth to work on, and if not checked continue it to the injury of the trees. Don't stop to write us, to ask what shall be done, but kill the insects when first discovered, by some means. We have written in these past years enough about the tent-caterpillar to fill a small volume. We have shown its eggs, and set forth the importance of removing these. Where this has been thoroughly done, there will be but little trouble. Where it has been neglected, they will not "fold up their tents like the Arabs," but keep spreading them all the time. Wherever a nest or tent is seen, no matter how small—and they are very conspicuous when the dew is on them in the morning—do not rest until the nest is destroyed. Bend down the limb, climb the tree, get a step-ladder, or in some way reach the nest, and pull it out and crush the young brood. Some use swabs charged with soft soap, petroleum, or other substances. These will do if faithfully applied, but to our notion there is nothing as sure as pulling the nest off by hand, and putting it under foot. The squamish may wear gloves. Borers are to be probed or cut out. We haven't much faith in squirting any preparation into their holes. The curello will now begin its work, and must be met at once. Avoid all vaunted remedies and washes, but follow the only sure plan yet known—jarring the trees, catching the insect on a large cloth, and killing it. The white grub will often make sad havoc among seedlings and young nursery stock. When a young tree in the row wiles, dig down and find the borer and kill him. Lice or aphides will appear on the young growth. If the trees are small, bend down the ends of the infested twigs, and immerse them in tobacco water or quassia water.

Fruit Garden.

Many of the hints given in this and the previous months, under the head of "Orchard and Nursery," have an application here, and need not be repeated. Finish up all uncompleted planting, and keep the surface of the soil always free from weeds. A pronged hoe, or hoe-fork—especially Hexamer's—will be found preferable to the common hoe.

Grape Vines.—So much was said last month in an article on the vine, concerning the treatment of young vines, that we need only refer to that, and to an article in this paper, on page 186, for all needed directions. If vines removed from the trellis are yet to be fastened up, they will need careful handling after the buds have started. Vines trained with arms should be curved, i. e. the extreme ends of the arm bent downwards to insure an equal starting of the buds along the whole length of the arm. Vines may readily be propagated by putting down

Layers of last year's wood. Make a well-prepared trench, 6 inches deep, and lay the cane down in it, and hold it there by means of pegs. As the shoots start, gradually fill the trench, by adding soil.

Currants.—Keep the ground clean or well mulched. The principal insect enemies to currant culture are sufficiently treated of on page 185.

Strawberries.—Though late, these may still be planted, and better than in autumn. Plants set this spring are often disposed to bear. It is better to remove all the flower-stalks, and let the plant be preparing for a good crop next year rather than waste its strength in perfecting a few berries. Put on a mulch of straw, bog hay, or corn stalks, before the fruit begins to ripen. Saw-dust and tan soil the fruit, and thus defeat one of the objects of mulching. Where the beds are not mulched, keep them clean, and do not disturb the roots in working. If any hoeing is to be done, let it be only on the surface. Pull up all the large weeds by hand.

Picking and marketing should be provided for. Baskets and crates should be bought and marked. Recollect that these things sometimes fail to be

promptly returned, and it is necessary to guard against a short supply of packages by providing an abundant stock. We cannot reply to the question, "Which is the best basket?" as the customs and prejudices of different markets vary so much. The commission dealer is the best judge of the basket which meets with the most favor from buyers.

Insects will infest the fruit garden. Some of these have been mentioned elsewhere. Those which trouble the grape vine at this season are mainly the flea-beetle and the rose-bug. They are both regular "hard shells," and do not seem to yield to ordinary treatment. The flea-beetle does its work on the buds, and the rose-bug is mainly destructive to the blossoms of the vine. As yet, hand picking is the only known help; or, what is the same thing, they may be shaken off when torpid, early in the morning, and caught on a cloth. One who is constantly among his vines can do a great deal of thumb and finger work in destroying insects and their eggs. The leaf-rolling caterpillar must be treated by hand, as it is shielded from any liquids.

Kitchen Garden.

This month usually brings the first products of the garden. Those who had the forethought to have winter spinach, have enjoyed that delicious vegetable ever since the snow disappeared, and so with salsify, horseradish, and others. But from this spring's sowing, even in the most favorable situations, radishes, lettuce, cress, and, it may be, early turnips and carrots, are the first returns received from early sown seed. To our notion, no vegetable that comes afterwards—is eaten with half the zest as these, the first fruits of the garden.

Asparagus.—It is a good thing to have a bed just now; it, like all other good things, costs some trouble and forethought, but whoever has an established bed has a ready supply of a most delicious and healthful vegetable. Cut according to the weather, once in two or three days, or even daily. Use a sharp knife, and be careful not to injure the numerous buds still on the plant. The beetle is so destructive in some localities that asparagus has been abandoned. Its caterpillar is small, blackish, and about half an inch long. An experienced cultivator tells us that a dusting of air-shasked lime will kill them. If this does not answer, cut and burn every shoot, large or small, that is infested. No half-way measures will answer in this case.

Beans.—Plant as soon as danger of frost is over. If the first planting has done well, put in another for succession; if it failed, replant. Limas should not be put in the ground until the cold rains are over. Set poles 6 or 8 feet high, 4 feet apart each way, in warm, light, rich ground. Put 5 or 6 beans around each pole, pressing them into the soil eye downward, and covering an inch. Limas that have been started in hot-beds on sods, may be set in the open ground as soon as the weather is settled.

Beets and Carrots.—Those sown early are to be weeded and thinned. See article on page 188. Sowing may still be done. Where the ground is moderately moist, it is sometimes an advantage to sprout the seeds. Soak them in water over night, pour off the water, and keep the moist seeds covered in a warm place until they sprout. When the germ shows itself, dry off with plaster, and sow.

Cabbages, Cauliflowers, and the less cultivated Broccoli, Brussels Sprouts, and Kohlrabi, are to have much the same treatment. Kohlrabi does best sown in place, and the others transplanted. The early crop should now be well started, and will need frequent hoeing. A heavy sharp rake or a hoe fork is better to work among the plants than an ordinary hoe. Keep the ground stirred often, and the weeds will be kept down. If insects appear, use lime. Sow seeds of early and late sorts in open ground. Winingstadt is one of the best medium. Do not forget to have a plenty of the delicious Savoyas.

Celery.—Sow, if not already done. As soon as the plants are large enough, keep them weeded, and the soil loose around them. Turnip-rooted celery, prized by many for soups and salads, may be sown.

Cress or Peppergrass is to be sown every week.

Corn.—Put the seed into the ground as soon as it is safe. Each neighborhood has its favorite early sort. Early Dwarf Sugar is one of the best, but the ears are small. Darling's is early, but of indifferent quality. Stowell's is as yet the best late variety.

Cucumbers.—At the North generally this month is early enough to start the seeds on sods, under glass. When ready to set out, put them in well manured hills. Sow seed in similar hills when the weather gets warm. Use a surplus of seed.

Egg Plants in the hot-bed or frame are to be potted as soon as large enough, or transplanted to another bed, and kept under glass until cold nights are over.

Herbs.—Sow in seed-bed Sage, Thyme, Summer Savory, Sweet Marjoram, etc. The plants will be ready to follow cabbages, peas, or other early crop.

Leeks.—Sow in rich soil, as directed last month.

Lettuce.—Sow and transplant when large enough.

Martynia, the immature pods of which are valued for making sweet pickles, need warm weather.

Melons are treated in the same way as cucumbers.

Onions.—Sow and plant sets as heretofore directed. Weed the beds clean from the start.

Parsley.—Sow early in beds in the open ground.

Peas.—In hoeing, draw the earth toward the stem. Give brush to the tall sorts before they fall down.

Peppers are warm weather plants, and need the same nursing during their early growth as egg plants.

Potatoes.—Hoe or otherwise stir the ground as soon as the tops can be seen. A dressing of plaster applied at hoeing time is a great help.

Radishes may be had in abundance by making successive sowings. They may be put among slower growing crops, or used to fill spare corners.

Rhubarb.—Allow recently set plants to retain all their leaves until they become well established. Remove flower stalks when they first appear. Never cut the leaf stalks, but pull them; a quick sideways pull will separate them very quickly and neatly.

Spinach.—Sow, if not already done, and thin that already up. The New Zealand Spinach, a quite different plant, is valuable for summer use.

Sweet Potatoes.—Make well-manured ridges, about 30 inches apart at the top; and when cold rains are over, set the plants 15 inches apart. Set them down to the first leaf, and in very dry weather water the holes before putting in the plants.

Squashes need warm weather; treat as cucumbers.

Tomatoes.—Transplant in settled weather. Set Basket item for a way to make a cheap tomato.

Winter Cherry.—Sow and treat as tomatoes.

Flower Garden and Lawn.

Lawns as to their preparation were sufficiently treated in an article last month. A friend asks us to say something about the renovation of old lawns. If the lawn has failed from selecting an unfit kind of grass, the best way is to re-seed it. If through the abundance of weeds, dig out or pull the large ones, apply seed thickly, in order that there may be enough grass to crowd out the small ones, and endeavor to get a close turf at once by top-dressing and rolling. When there are inequalities of surface, remove the turf carefully, and fill up the hollow, or reduce the elevation, as the case may be, and replace the turf, if good. If not, get suitable sods from the pasture or road-side, and use instead.

Turfing.—It is often convenient to cover small areas with turf, and some use it for edgings. Many who lay turfing for the first time, make hard work of it. Prepare and level the ground, and then select the finest sod that the pasture or road-side will afford. Have a board 8 or 10 feet long and a foot wide, to cut by, and a sharp spade or edging knife to cut with. Lay the board down, stand on it, and with the spade or knife cut along the edges of the board and through the turf, so as to have a strip of the size of the board. Carefully lift up one end of this strip with the spade, and commence to roll it up like a piece of carpet. One person should roll, while another with the spade aids the separation of the turf from the soil below. These rolls are readily

transported to the place where they are to be laid, and by unrolling them, the operation of laying is done very rapidly. Use a large knife or edging tool in cutting, to make the edges of the turves fit, and beat down rather firmly by the use of the spade, or by lying down a board, and striking with a heavy pounder. When turves are laid on a steep bank, they can be held in place until the grass has taken hold, by the use of wooden pegs, driven through the sod into the soil.

Evergreens.—Two articles on selection and planting will be found on pages 187 and 188. Have a plenty, but do not crowd them, if intended for ornament.

Bulbs of Gladiolus, Japan, and Jacobean Lilies, Tigridas, and other spring kinds, are to be planted. Tuberoses are so slow, that it is more satisfactory, when practicable, to get bulbs that have been started.

Transplant those things which have been started in hot-beds, when the weather will suit, always previously hardening the plants by free exposure.

Dahlia.—Put the roots in a spent hot-bed or even in a warm exposure, where they can be covered with a mat or board at nights. When the buds start, divide the roots so as to have a bud to each.

Roses will be attacked by insects and will need care. Use whale oil or cresylic soap, and frequent hand picking must not be neglected.

Bedding Plants are raised under glass, and if set out too soon, fare badly during cold nights. Most disappointment with these results from putting them out before cold rains and chilly nights are over.

Other Matters appropriate now in many cases we discussed last month, and in the present paper will be found several articles on floriculture.

Green and Hot-Houses.

In bringing out plants, some discrimination must be made between the half hardy and the tender. The plants should be prepared for the change by a low temperature in the house, and abundant ventilation. Those pots not plunged in the borders, should be set on a layer of coal ashes, to prevent the worms from getting into them. Camellias are to be shaded from the hot sun, and all the plants placed where they will not be blown over. Many hard-wooded plants do better if allowed to remain in the house all summer. The glass must be shaded to protect the plants from the burning sun, and the press of out-door work must not allow watering, keeping off insects, etc., to be neglected.

Cuttings.—Most hard-wooded shrubs grow readily from green wood, which should be taken just as it is hardening, but not in too ripe condition.

Cactuses may be planted in the border, or kept upon the veranda; they are very ornamental.

Lantanas.—Those who have conveniences for wintering the plants should train some of these in a tree form. They make most charming ornaments.

Cold Grapery.

If the vines have not yet been put up, it should be done as noted last month. As the growth begins, the temperature may reach 85° during the day. The fruiting shoots should be the strongest and most promising ones. When these are selected, rub off the rest. Preserve the air in a properly moist condition by a free use of the syringe.

A Sample of Hundreds.—The following letter, dated "Haviland Hollow, Dutchess Co., N. Y.," is very similar in character to many hundreds, if not thousands, of letters received at the *Agriculturist* office during the present year, and the same may be said of previous years: "MESSRS. ORANGE JUDD & CO.—I wish to inform you that the 'Premium Watch' came all right. It is, indeed, a beauty. We have now three of your valuable premiums—the encyclopedia, one dozen table spoons, and the gold watch, which wife pronounces perfect in its kind—and all at a mere trifling cost of time or trouble. I think the three premiums have not taken me from my regular work over a week at most. I guess we will have to get the Steinway or Colibri piano next year.—Yours respectfully, G. HEARN."—There is plenty of time for hundreds of others to secure these fine premiums during the present season. See premium list on following page.

AMERICAN AGRICULTURIST.

ORANGE JUDD & Co., Publishers, 245 Broadway, N. Y. City.

ANNUAL SUBSCRIPTION TERMS (always in advance): \$1.50 each for less than four copies; Four to five copies, \$1.25 each; Ten to nineteen copies, \$1.20 each; Twenty copies and upwards, \$1 each. Papers are addressed to each name.

A Beautiful Book,

Valuable to Everybody;

Sold for only Half a Dollar,

(and sent Post-paid.)

Well Worth a Whole Dollar.

It is also

Presented and sent Post-paid,

For only a few Minutes' Work!

180,000 Readers will Please N. B.

The Offer is to Each one of You!

Our *Agricultural Annual No. 2*, for 1868, and our *Horticultural Annual No. 2*, for 1868, are among the most valuable and beautiful volumes issued in this country during the present year. They are packed full of good information, and each volume contains a large number of beautiful engravings. They are worthy a place in every family, in city, village, and country. They are universally admitted to be the cheapest volumes issued. They are original, the matter and engravings being all prepared exclusively for these volumes by a large number of first class practical writers. As these books are a permanent Annual Institution, and as we have made the volumes for 1868 decidedly superior to those for 1867, (though those were good as a first attempt,) we want everybody to have a copy, for all who get them this year will be sure to want the numbers for 1869 and thereafter. We therefore invite everybody who has not done so already, to send only 50 cents, and secure a post-paid copy of either the *Agricultural Annual No. 2*, or the *Horticultural Annual No. 2*, or send \$1 and get both of these volumes. They are entirely different.

But we will do even better, when desired, viz.: To
 ☞ any person sending during the month of May ☞
 ☞ a subscriber to the *American Agriculturist* for ☞
 ☞ 1868 at the regular price (\$1.50), we will ☞
 ☞ present a copy of either of the above-named ☞
 ☞ Annuals that may be desired, and we will ☞
 ☞ send it post-paid to any point in the United ☞
 ☞ States or Territories, (except to those places ☞
 ☞ reached only by the Overland Mail, as that ☞
 ☞ mail will not carry books unless prepaid ☞
 ☞ letter postage.)...A few minutes' work or ☞
 ☞ talking will enable any person to secure a ☞
 ☞ subscriber to the *Agriculturist* (as valuable ☞
 ☞ as we are now making the paper), and ☞
 ☞ then the *Annual* will be obtained free. ☞

N. B.—One Annual is offered for each subscriber sent at \$1.50. The sender can choose any one of the four Annuals already issued, viz.: *Agricultural No. 2* for 1868, or *No. 1* for 1867; or *Horticultural No. 2* for 1868, or *No. 1* for 1867. One, two, three, four, or more subscribers will secure an equal number of Annuals, of any issue desired. . . . N. B.—These premium Annuals are special, and are not included in the general premiums which are separate, but are continued, as noted elsewhere.

MAY, MAY, THOU MAY est, HE OR SHE MAY.

We may say there are many good things some persons may do in this month of MAY, but there is one thing that a great many persons may do and can do—and easily do it, too. There are over 30,000 Post-Offices in the United States and the Dominion. We have subscribers at most of these offices, but we have sent premiums to only about 5000 of them as yet, though there is hardly a Post-office where there are not persons enough to make up a premium club, and persons, too, who would gladly take the *Agriculturist*, if they only knew its value and cheapness. (The first four numbers of this year, for example, contain 164 large pages, over 140 engravings, and a very large amount of useful, practical reading matter for the Household, the Garden, and the Farm. The next eight numbers will be equally valuable or better, and yet the *Agriculturist* for the whole year is furnished for only \$1.50, or about the cost of the white paper it is printed on). The fact that no large number of persons have obtained premiums, is one proof that others can do the same thing at other Post-Offices. Indeed, at some larger offices men and women have obtained subscribers enough to get several premiums. Single individuals have this year received from \$500 to \$1500 worth of premiums each. One lady alone has obtained two \$500 Pianos and sold them, besides getting a lot of other premiums. Now there are over

25,000 Post-Offices

still left, at most of which any enterprising person may get one or more valuable premium articles, (see list of them in the next column,) and do it during this month of May. It will be seen by the table, that only 11 or 13 subscribers are required for several of the good articles offered. More than this number have been obtained at a multitude of the smallest post-offices, and in the sparsely settled regions of the Far West, and in the northern regions of New England, New York, and almost all over British America. Single post-offices in Nova Scotia take from 100 to 200 copies each. Our "Explanation" last month showed how and why we can give these large premiums, and we now renew the invitation to all our readers, to make the effort this month to secure a premium article. Every copy of the paper introduced into a neighborhood will awaken thought and stimulate improvement, guard the people against humbugs, and be useful in many ways. Persons have told us that improvements, set a going by this journal, have resulted in almost doubling the value of real estate—thus adding scores of thousands of dollars to the real wealth of a single locality. It is indeed very natural that this should be the case.

But aside from the good done to others by introducing a journal of this character, the premiums appeal to one's own direct, immediate, personal interest. The premium articles are all very good and valuable, and a few hours of canvassing will secure one of them without cost. Try it with a will and determination to succeed, and in nine cases out of ten you will be successful. Take a copy of the paper, exhibit it among neighbors and friends, in your own neighborhood and elsewhere (for premium clubs need not be all at one post-office), show what the paper is, what it is worth, how cheap it is, and in a brief time the desired number of subscribers can be gathered, and the premium secured. A full description

of the premiums on a separate sheet will be sent free to any one desiring it. Any Specimen numbers, cards and show bills needed, will be supplied free. A multitude of persons have during April completed lists already begun, and have begun and made up new lists. MAY is just as favorable a season for thousands of others to do the same. TRY IT.

We take so much pains to procure only good articles in all cases, that any one securing anything from our premium list, saves the risk usually run of getting poor or indifferent goods, when buying of unknown or irresponsible parties. Everything we send out as a premium is guaranteed to be the best of its kind and price.

Old and new subscribers count in premium lists. As fast as subscriptions are obtained, send them along, that the subscribers may begin to receive the paper; and when all the names that can be obtained are forwarded, select the premium, and it will be promptly furnished. To save mistakes and keeping accounts, send with each list of names, the exact subscription money.

Remit in Post-Office money orders, drafts or checks on N. Y. City; if these cannot be had, register money letters.

Every name designed for a premium list must be so marked WHEN sent in. (We cannot count others.)

Table of Premiums and Terms, For Volume 27—(1863).

Open to all—No Competition.

No. Names of Premium Articles.

1—Garden Seeds for a Family (40 kinds) \$5.00	18	37
2—Flower Seeds for a Family (100 kinds) \$5.00	18	37
3—Vernonia Stock (40 kinds desired) \$20.00	20	40
4—One Grape Vine (1/2 of No. 1) \$10.00	20	40
5—One Grape Vine (1/2 of No. 1) \$10.00	20	40
6—Lemon (12 Buds) \$15.00	15	30
7—Sewing Machine (Granger & Baker) \$35.00	60	120
8—Sewing Machine (Hart & May) \$30.00	60	120
9—Sewing Machine (Singer's Tailoring) \$30.00	60	120
10—Sewing Machine (Thompson) \$30.00	60	120
11—Sewing Machine (Gibbs) \$30.00	60	120
12—Sewing Machine (Parker & Lyon) \$30.00	60	120
13—Sewing Machine (Thorpe & Wilson) \$30.00	60	120
14—Sewing Machine (Thompson) \$30.00	60	120
15—Clothes Wringer (Best Universal) \$10.00	18	37
16—Tee Set (Hart's Best Silver Plated) \$30.00	60	120
17—One Dozen Tea Spoons (do. do.) \$10.00	18	37
18—Ice or Water Pitcher (do. do.) \$10.00	18	37
19—One Dozen Tea Spoons (do. do.) \$10.00	18	37
20—One Dozen Tea Spoons (do. do.) \$10.00	18	37
21—One Dozen Dining Forks (do. do.) \$10.00	18	37
22—One Dozen Dining Forks (do. do.) \$10.00	18	37
23—One Dozen Dining Forks (do. do.) \$10.00	18	37
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90—One Dozen Dining Forks (do. do.) \$10.00	18	37
91—One Dozen Dining Forks (do. do.) \$10.00	18	37
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95—One Dozen Dining Forks (do. do.) \$10.00	18	37
96—One Dozen Dining Forks (do. do.) \$10.00	18	37
97—One Dozen Dining Forks (do. do.) \$10.00	18	37
98—One Dozen Dining Forks (do. do.) \$10.00	18	37
99—One Dozen Dining Forks (do. do.) \$10.00	18	37
100—One Dozen Dining Forks (do. do.) \$10.00	18	37

Every article on our list is the best of its kind, and, in all respects, what is claimed for it. No charge is made for packing or boxing any article in our Premium List. The forty-four Premiums, viz., Nos. 1, 2, 6, and from 36 to 39, and from 50 to 86 inclusive, will each be delivered FREE of all charges,

by mail or express, (at the Post-Office or express office nearest recipient), to any place in the United States or Territories excepting those reached only by the Overland Mail.—The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance that may be specified.

Nos. 50 to 60—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-sixth Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are put up in clean numbers, with the Index to each volume.—They are profusely illustrated, the Engravings used in them having alone cost above Twenty Thousand Dollars! These obtaining premiums for less than eleven volumes, can select any volumes desired, from XVI to XXVI inclusive. For ordinary use, the sets of numbers unbound will answer quite well.—Many hundreds of these volumes are taken every year as premiums. In Nos. 61 to 71 we offer the bound volumes also.

Nos. 74 to 85—GOOD LIBRARIES.—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any one of the premiums Nos. 74 to 85, may select any books desired from the list below, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post-Office, or Express office, as we may find it most convenient to send them.

No. 86—General Book Premium.—Any one not desiring the specific Book premiums, Nos. 74 to 85, on sending any number of names above 25, may select Books from the list below, to the amount of 10 cents for each subscriber sent at \$1; or to the amount of 50 cents for each name sent at the (100) club price of \$1.20 each; or to the amount of 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

BOOKS FOR FARMERS AND OTHERS.

(For sale at the office of the Agriculturist, or they will be forwarded by mail, post-paid, on receipt of price.)	
Allen's (R. L.) Rural Architecture	\$1.50
Allen's (R. L.) American Farm Book	\$1.50
Allen's Diseases of Domestic Animals	\$1.50
Am. Agricultural Annual, 1862 & 1863, each, pa. 20c; do.	75
Am. Horticultural Annual, 1862 & 1863, each, pa. 20c; do.	75
American Bird Fancier	\$1.50
American Pomologist—By Dr. John A. Ward	3.00
American Rose Culturist	3.00
American Weeds and Useful Plants	1.00
Architecture, by Cummings & Miller	10.00
Architecture, Modern Am., by Cummings & Miller	10.00
Bees' Fruit Cakes and Cakes	1.00
Dement's Rabbit Fancier	3.00
Bonner's Method of Making Manure	25
Book of Evergreens (4 Rooms)	3.00
Bonsaigai's Rural Economy	1.00
Breck's New Book of Flowers	1.50
Buck's Flower Garden	1.50
Buist's Family Kitchen Gardener	1.50
Buist's Garden of Fruit and Flowers	1.50
Cobbett's American Gardener	25
Cole's (S. W.) American Fruit Book	25
Cottrell's Veterinary	5.00
Copeland's Country Life	850, cloth.
Cotton Culture, (Lynn)	1.50
Cotton (Geo. H.) Modern Horse Doctor	1.50
Dad's American Cat Doctor	1.50
Dani's Duck Manual	1.50
Darwin's Animals & Plants under Domestication, vols.	75
Dog and Gun (Hooper's).....paper, 30c; cloth.	60
Downing's Landscape Gardening (new Edition).....	6.50
Draining for Profit and Health by E. E. Warner	1.50
Eastwood on Cranberry	1.50
East's Western Fruit and Garden Guide	50
Flax Culture	50
Fishes (Thomas W.) Pear Culture	1.25
Fisher's Farm Druggist	1.50
Fisher's Grape Culturist, (Revised Edition)	1.50
Fisher's Strawberry Culturist	1.50
Fisher's Small Fruit Culturist	1.50
Gardening for Profit, by Peter Henderson	1.50
Gregory on Snail	1.50
Harrison on Much Cattle	1.50
Harris' Insects Injurious to Vegetation, etc., 2 vols. pa.	6.00
Harris' Rural Annual, 1862 & 1863, each, pa. 20c; do.	75
Herbert's Hints to Horsekeepers	1.50
Hop Culture	1.50
Hudson's Agricultural Chemistry	1.50
Johnston's Elements of Agricultural Chemistry	1.50
Leach's How to Build Hot-Houses	1.50
Martin the Horse Doctor	1.50
Moir on the Grape Vine	1.50
My Vineyard at Lakewood	1.25
Norton's Scientific Agriculture	1.50
Onion Culture	50
Our Farm of Four Acres (bound) 60c.....paper	75
Parson on Strawberry Culture	1.50
Pest and Its Uses, by Prof. S. W. Johnson	1.25
Puller's Land and Water	1.50
Quincy's System of Bee-Keeping (New)	1.50
Randall's Mysterious Husbandry	1.50
Randall's Fine Wood Shaving Machinery	1.50
Rivers' Miniature Fruit Garden	1.50
Richardson on the Dog, paper 30c; cloth 60c; bound	1.00
Rivers' Bonaparte's Dog	1.50
Schew's Gardener's Text Book	1.50
Schew's John's Stable Book	1.00
Sturgeson's Food of Animals	1.50
Tobacco Culture	25
Ward's Hedges and Evergreens	1.50
Ward's and Specimen of the	1.50
Yonah and Martin on Cattle	1.50
Yonah on the Hog	1.50
Yonah on Sheep	1.50

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for the month ending April 14, 1888, and for the corresponding month last year:

TRANSACTIONS AT THE NEW-YORK MARKETS.			
RECEIPTS.	Flour, Wheat, Corn, Rye, Barley, Oats.	5 days them	10 days them
Flour	1,000,000	915,000	1,000,000
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

SALES.			
Flour, Wheat, Corn, Rye, Barley, Oats.	5 days them	10 days them	15 days them
Flour	1,000,000	915,000	1,000,000
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

2. Comparison with same period at this time last year.			
RECEIPTS.	Flour, Wheat, Corn, Rye, Barley, Oats.	30 days 1887	30 days 1888
Flour	1,000,000	915,000	1,000,000
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

SALES.			
Flour, Wheat, Corn, Rye, Barley, Oats.	30 days 1887	30 days 1888	30 days 1889
Flour	1,000,000	915,000	1,000,000
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

3. Exports from New York, Jan. 1 to April 14:			
Flour, Wheat, Corn, Rye, Oats.	1887	1888	1889
Flour	1,000,000	915,000	1,000,000
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

4. Stock of grain in store at New York:			
Wheat, Corn, Rye, Barley, Oats, Maize.	1888	1889	1890
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

Dec. 11.			
Wheat, Corn, Rye, Barley, Oats, Maize.	1888	1889	1890
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

Jan. 1.			
Wheat, Corn, Rye, Barley, Oats, Maize.	1888	1889	1890
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

Feb. 1.			
Wheat, Corn, Rye, Barley, Oats, Maize.	1888	1889	1890
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

Mar. 1.			
Wheat, Corn, Rye, Barley, Oats, Maize.	1888	1889	1890
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

Apr. 1.			
Wheat, Corn, Rye, Barley, Oats, Maize.	1888	1889	1890
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

May 1.			
Wheat, Corn, Rye, Barley, Oats, Maize.	1888	1889	1890
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

CURRENT WHOLESALE PRICES.			
March 14.	April 14.	May 14.	June 14.
Flour	1,000,000	915,000	1,000,000
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

PRICE OF GOLD.			
1890.	1891.	1892.	1893.
Gold	1,000,000	915,000	1,000,000
Silver	1,000,000	915,000	1,000,000
Copper	1,000,000	915,000	1,000,000
Iron	1,000,000	915,000	1,000,000
Steel	1,000,000	915,000	1,000,000

FLOUR—Super to Extra State.			
1890.	1891.	1892.	1893.
Flour	1,000,000	915,000	1,000,000
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

WHEAT—Super to Extra State.			
1890.	1891.	1892.	1893.
Wheat	1,000,000	915,000	1,000,000
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

CORN—Super to Extra State.			
1890.	1891.	1892.	1893.
Corn	1,000,000	915,000	1,000,000
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

RYE—Super to Extra State.			
1890.	1891.	1892.	1893.
Rye	1,000,000	915,000	1,000,000
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

BARLEY—Super to Extra State.			
1890.	1891.	1892.	1893.
Barley	1,000,000	915,000	1,000,000
Oats	1,000,000	915,000	1,000,000

OATS—Super to Extra State.			
1890.	1891.	1892.	1893.
Oats	1,000,000	915,000	1,000,000

LARD—Super to Extra State.			
1890.	1891.	1892.	1893.
Lard	1,000,000	915,000	1,000,000

BEEF—Super to Extra State.			
1890.	1891.	1892.	1893.
Beef	1,000,000	915,000	1,000,000

PORK—Super to Extra State.			
1890.	1891.	1892.	1893.
Pork	1,000,000	915,000	1,000,000

BUTTER—Super to Extra State.			
1890.	1891.	1892.	1893.
Butter	1,000,000	915,000	1,000,000

EGGS—Super to Extra State.			
1890.	1891.	1892.	1893.
Eggs	1,000,000	915,000	1,000,000

POULTRY—Super to Extra State.			
1890.	1891.	1892.	1893.
Poultry	1,000,000	915,000	1,000,000

FISH—Super to Extra State.			
1890.	1891.	1892.	1893.
Fish	1,000,000	915,000	1,000,000

FRUIT—Super to Extra State.			
1890.	1891.	1892.	1893.
Fruit	1,000,000	915,000	1,000,000

VEGETABLES—Super to Extra State.			
1890.	1891.	1892.	1893.
Vegetables	1,000,000	915,000	1,000,000

GRAIN—Super to Extra State.			
1890.	1891.	1892.	1893.
Grain	1,000,000	915,000	1,000,000

LIVESTOCK—Super to Extra State.			
1890.	1891.	1892.	1893.
Livestock	1,000,000	915,000	1,000,000

DRESSING—Super to Extra State.			
1890.	1891.	1892.	1893.
Dressing	1,000,000	915,000	1,000,000

TANNING—Super to Extra State.			
1890.	1891.	1892.	1893.
Tanning	1,000,000	915,000	1,000,000

SMITHING—Super to Extra State.			
1890.	1891.	1892.	1893.
Smithing	1,000,000	915,000	1,000,000

BLACKSMITHING—Super to Extra State.			
1890.	1891.	1892.	1893.
Blacksmithing	1,000,000	915,000	1,000,000

WHEELWRIGHTING—Super to Extra State.			
1890.	1891.	1892.	1893.
Wheelwrighting	1,000,000	915,000	1,000,000

COBBLING—Super to Extra State.			
1890.	1891.	1892.	1893.
Cobbling	1,000,000	915,000	1,000,000

SHOEMAKING—Super to Extra State.			
1890.	1891.	1892.	1893.
Shoemaking	1,000,000	915,000	1,000,000

HATMAKING—Super to Extra State.			
1890.	1891.	1892.	1893.
Hatmaking	1,000,000	915,000	1,000,000

JEWELRY—Super to Extra State.			
1890.	1891.	1892.	1893.
Jewelry	1,000,000	915,000	1,000,000

WATCHMAKING—Super to Extra State.			
1890.	1891.	1892.	1893.
Watchmaking	1,000,000	915,000	1,000,000

CLOCKMAKING—Super to Extra State.			
1890.	1891.	1892.	1893.
Clockmaking	1,000,000	915,000	1,000,000

OPTICIAN—Super to Extra State.			
1890.	1891.	1892.	1893.
Optician	1,000,000	915,000	1,000,000

PHARMACY—Super to Extra State.			
1890.	1891		

The Best Machines—Consistent

"Notices."—We were amused the other day by receiving from a Western subscriber two "notices" cut from handbills, but both credited to the *Agriculturist*—one recommending one machine, and the other speaking just as strongly of another, as the best. It happened thus: Some seven or eight years ago we commended a machine as the best we knew of; a year or two later a new machine came out which was decidedly superior, and we then spoke of that as the best. It seems that the recipient of the first "notice" still continues to quote the recommendation, but without giving the date, while the manufacturer of the later machine also quotes our opinion of their machine.—We have noticed this same thing in other cases—especially in sewing machines. We cannot follow up all the advertisements and handbills in the land, to keep them straight. Having no pride of opinion (often styled "conservatism,") we are ready to adopt the newest thing, if the best, and to say so. Those who read the *Agriculturist* regularly will find no discrepancy, but rather a steady consistency, and will know our latest experiences and observations. We claim to progress in knowledge, and expect to find improvements, good, new things, coming out every year, and to talk about them.

Saw-dust as Manure.—

The common practice of throwing this article into the streams on which saw-mills and shingle-mills are situated, is reprehensible. It would not pay to spread it upon a muck swamp, but upon any sandy land, or light, gravelly loam, deficient in vegetable matter, it would prove a good dressing, and in time would show good results. The best use we have ever seen it put to, was bedding for animals in stables. It is an excellent absorbent, and will keep cows clean, even better than straw. It is also a very light, handy article in the barnyard, and more cleanly to handle than muck in common, open, privy vaults. The article is merchantable in cities, and is quite extensively used upon floors in eating saloons, and for other purposes. At country mills, it can generally be had for the carting, as mill owners are glad to be rid of it. It is a good substitute for straw, and this is now worth so much for manufacturing purposes, in many parts of the country, that no thrifty farmer can afford to use it for bedding.

Ice Profitable.—

Some curious figures about ice in N. Y. City are given in another item. We have often spoken in the *Agriculturist* of the utility of ice to farmers, aside from its comfort and convenience. Any one having access to a pond of clear fresh water, in a region cold enough to give 6 inches or more of clear ice, can readily construct a rude receptacle that will retain it during most of the summer, and store a family or dairy supply at a few dollars' expense. The writer has delivered at his residence 30 to 40 lbs. of ice per day from May 1st to Nov. 1st, at a cost of \$3 per month in May, June, September, and October, and \$4 per month during July and August, or \$30 in all. A somewhat careful calculation shows that the saving in less frequent bakings of bread, in milk, potatoes, and other vegetables, which are kept much longer from souring or becoming dry or stale, and especially in meats, which can be provided in large quantities without loss, amounts to much more than the 11 cents a day paid for ice. The better quality of the ice-kept food makes it go further, and saves in butter and other materials. The only drawback is the temptation to drink too much of the nicely cooled water, with meals and at other times, in hot weather. This must necessarily be controlled by the exercise of reason and the will.

Loading Logs without Gins.—

"Saw-log" (not the "Saw-log Man" of fable, we presume,) writes from Chautauq Co., N. Y., how he loads logs in a simpler way than that described by "J. J." of Iowa, in a previous number. His process is exceedingly simple. Two ropes or chains extend from the sled around, under, and over, the log, and back over the sled, where they are united. Skids are laid, and the team hitched to the ropes or chains. "Saw-log" says: "Then go ahead with your team, and if they won't roll on any log that they can move after it is on the sled they are not like our teams. We use chains the same as we bind with, and when one team is alone, take along an extra chain."

Shall We Raise Corn at the East?

asks "V. D." Mass.—Yes. The average cost of raising it in the Connecticut River valley does not exceed seventy-five cents a bushel, and at present prices there is about that amount of clear profit. The cost of raising can be a good deal diminished by using the horse more in cultivation, by planting in drills, and by applying more manure to the acre. It pays a great deal better to raise eighty bushels of corn to the acre, than it does to get forty. It takes more manure and a little more labor, but it makes the cost of the corn per bushel, a good deal less.

Just try on well-prepared land, drill planting, the stalks to stand one foot apart; the application of three hundred pounds of fish manure per acre to the growing plants at the second cultivation; and cultivate with horse power at least six times. This last is practicable on all smooth lands, and gives big crops at a small cost per bushel.

Use of Plaster in Stables.—"Will it pay to sprinkle plaster in the stables daily? If so—how much?" It pays to apply simple plaster to most soils; of course it pays better to use the plaster beforehand, to fix ammonia, as it does when used in stables. Enough only is required to dust over the surface, which is moistened daily by the droppings and urine, and to sprinkle along the liquid manure gutters—say half a pint to each stall.

Land Plaster or Gypsum.—"J. H. W." Beaver Dam, Wis., asks: "Will land-plaster lose strength by lying exposed to the weather?"—It will not lose strength, but will go to waste. Water at ordinary temperatures dissolves it slowly; hence it would be washed away more or less, if left exposed. It requires about 400 pounds of water to dissolve a pound of gypsum. If a heap, which covered ten foot square, were to be exposed to the action of two or three hard rains, during which, say four inches of water should fall, there would be only about five pounds of plaster dissolved and washed away, for four inches of water, covering one hundred square feet, would weigh about 977 pounds.

Co-operative Farming.—

"H. K." Watertown: We have no acquaintance with the working of these enterprises in this country. They have been tried in England, and are said to be successful. We see no reason why the plan would not work just as well upon a farm as in a manufacturing establishment. The capital invested in the land, buildings, tools, stock, etc., must first draw interest. Then the overseeing and labor must be paid. After allowing a small sum for depreciation of buildings and tools, the balance of profit might be divided among the laborers. It would, of course, be better for the workmen to own a part of the capital, but that would not be necessary. This plan would give every man a personal interest in the success of the crops, and make him faithful. It would also prevent strikes, and the jealousy that so often exists between the employer and the laborer. There is a farm of this kind at Hallbarton, Peterborough county, Canada West, and a little personal observation of its working would be desirable before starting a new enterprise on the co-operative plan.

Experiment in Pig Feeding.—

"M. Pleasant, Pa., writes to the *American Agriculturist*: 'I took a pig that weighed 12 pounds, put him in a tight pen, and fed him three bushels of corn chop [coarse meal probably.—Ed.] and gave him cold water to drink. After eating the three bushels of corn his weight was 73 pounds, showing a gain of 60 pounds.'—With corn at \$1 a bushel, this is five cents a pound for pork, live weight.

Cows at Calving.—

A correspondent writes: "1. Do you make it a point to be present when your cows calve, or to have some body present? 2. What harm in having a cow pretty fat when she comes in? 3. My cow is now dry, will calve in three weeks, has one pint of oil-meat a day—shall I feed her more? 4. She is good beef, but not fat—suppose the cow calves in her stall with her head tied—what harm?" 1. It is well to be present yourself or to have some trusty person present, but in forty-nine cases out of fifty the cow would do just as well alone. It fact, far more cows are injured by the hasty officiousness of the attendant than by neglect. 2. No harm in having a cow moderately fat when she comes in. It is far better than to have her poor. She will be stronger and healthier, and the calf will be fatter. If she is a good milker, you will get back all the fat in the form of nice, yellow butter. 3. Give her enough to keep her bowels slightly relaxed. Two quarts a day will not hurt her. We have frequently fed four quarts a day. If she is cistive, you may give her lined ten—two quarts of flaxseed boiled in two pails of water. 4. We frequently have them calve so, but it is better to have them free.

Capons of the Largest Size.—

"Y. Y. C." Carroll Co., Md. We have no doubt that the use of a Grey Dorking cock with either Brahma or Cochins hens would give you the fowls you desire for early Capons of very large size—handsome, compact, and heavy. We would prefer to own Dorkings and Brahmas. The hen imparts size and plumage, the cock color of flesh, aptitude to fatten, and also, in a great measure, style and shape.

Report of the Maine Commission

on Fisheries.—This is a document of 127 pages, showing the present condition of the fisheries in Maine, and what needs to be done to restore fish to the rivers in

their former abundance. There are twenty-seven rivers in the State emptying into tide water, besides smaller streams, in which salmon, shad, alewives, and other valuable fish, were once found in abundance. From many rivers salmon long ago disappeared, and only in the Penobscot, which is least obstructed by dams, are they caught abundantly. In this stream about 12,000 salmon and 2,500,000 shad are caught annually. In the Kennebec, where 300,000 were formerly taken, not more than a hundred are caught in average years. The causes of this diminished yield of fish are mainly the building of dams, cutting off the fish from their breeding grounds, and overfishing. Maine is better supplied with rivers for breeding shad and salmon than any other State, and the restocking of these streams is a matter of the highest importance to her people, and indeed to the whole country, as there is hardly any limit to the consumption of these fish. With suitable legislation for all our rivers, pickled salmon and shad will be as plenty as cod and mackerel.

King Dagobert Fowls.—

A Paris correspondent of The Nation has the credit of putting a curious tale in circulation; it is this:—The Abbé Denis, curate of a church in the Faubourg St. Antoine, Paris, has just erected a church on what is said to be the site of an old chateau of King Dagobert; beneath the ruins was found a hen's nest full of eggs, where no hen for the past 1,300 years could have laid them. They were hatched, and a new breed of fowls is the result. The benevolent Abbé is about to organize a sale of Dagobert eggs for the benefit of the poor of the parish. Our readers need hardly be informed that eggs could never keep so long, even if we admit the story of the mummy wheat. Whether any one among our readers may be found to endorse this "pious fraud" or not, we all must admire the ingenuity of the French in "getting up" marvellous stories and palming them off as facts. This is much like the story of the great horse-flesh henry of Mons, De Rosa, which was so widely believed and so many times proved to be false.

1,260,000,000 Pounds of Ice have

been stored the past winter by only five of the New York City ice companies—nearly two-thirds of it by the old Knickerbocker Company alone. If we allow the odd 200,000,000 lbs. for waste, we still have 1,000 lbs., or half a ton, for each of the million inhabitants of the city; or 1½ ton (300 lbs.) each, for the city and its suburbs of Brooklyn, Jersey City, etc.—an average of nearly 6 lbs. per day for every man, woman, and child, during the six summer months. The distribution is by no means equal, however, for a large proportion of the poorer classes use no ice directly, except in the drinking shops—though the meat they consume is generally kept on ice, or in ice-cooled rooms or boxes.... If you'd, at first thought, seem as if so large an amount of ice brought to the city, would in some measure reduce the general summer temperature. How slight the effect may be judged from the fact that all this ice has been gathered from about 400 acres, the area of a moderate-sized city ward, and we know how soon such a field of ice would disappear under a July sun.... If we allow for the amused ice that is exported, and estimate for only half of the amount now in store to be used and paid for, at an average price of 1½ cent per lb., we shall still have the respectable sum of one and a half million dollars paid this year by New Yorkers to "keep cool."

Olive Culture.—

"G. C. H." writes: "I have read what you say about 'The Olive and its Culture,' and having resided many years in Syria, where the olive grows luxuriantly and lives to a great age, I may be allowed to add my mite to your statement. From all I can learn, the climate of Syria approaches nearer to that of California than to any other part of the United States. The soil in which it flourishes best is a chalky marl or cracked strata of limestone. It seems to delight in penetrating its roots into the clefts of the rock and crevices of flinty marl. If the mould is so deep as not to allow its roots to reach the rock beneath, it is said to suffer in consequence, and the berries become small and juicyless. In places where the soil is sandy, a good supply of chalky marl is applied to the trees; no manure is necessary when the tree can have this marl, which seems to be its natural soil. The tree requires but very little labor or care of any kind; it hardly yields a crop of any consequence until it is fifteen years old. It bears an abundant crop generally every other year. In Syria, it does not flourish more than 3,000 feet above the sea, and in the interior not so high. It does not flourish in Egypt, which is warmer than Syria; probably because the soil is not suitable.

A New Disease among Fowls.—

J. W. Stafford, of Cleveland, O., has had two hens that swelled up very large and died. He says: "I opened them and found a large swelling that looked more like sheep's pluck than anything else I can compare it to, but it was harder. It seemed to fill the whole inside." Have any of our readers had experience with anything similar?

Obtaining Credit under False Pretences.

—If a man obtains possession of a lot of books from us under a false representation, he will, if convicted, be sent to the State Prison. A scoundrel of this kind, knowing the risk he runs, shows a certain amount of daring, and we have for him something of respect that we have for a highwayman—that small amount which misdirected courage will command. If there can be a difference in thieves, we hold the highwayman who boldly demands "your money or your life" far above the sneak thief, who steals in at the hall door and takes our great coat. On a par with these sneak thieves are those who, by garbling our writings or by putting what we have said in a false light, make us appear to say just the opposite of what we did say. We will give an illustration of meanness mingled with audacity, which defies common law as well as common decency. The "Independent," a professedly religious newspaper, allowed a vendor of quack medicines to advertise his nostrum in a way that no journal should tolerate, unless its readers are of a different class from what we take those of the Independent to be. Nastiness in many of the daily papers does not surprise us; but such stuff in a paper professing to lead people in the right way, induced not only the *Agriculturist*, but the *Christian Intelligencer*, N. Y. Evangelist, and other papers, to speak out, and in no measured words, concerning this outrage upon propriety and decency. In rapping the Independent over the knuckles, we were obliged to allude to the quack medicine. This was "nuts" for the vendor of the stuff; his name was not mentioned, and he was only concerned in our notice by inference. As some dogs thank you for any attention, even if it be a kick, this fellow, with a meanness parallel to that of a sneak thief, and an impudence almost equal to that of the highwayman, advertises his nostrum in the daily papers, and there says, "The American Agriculturist! he had better go to evening school and learn how to spell, Orange Judd & Co., Proprietors, having seen my advertisement, are fully acquainted with its uses and merits." He quotes other papers also, and adds: "The editorials in the above papers were entirely unsolicited by me; in fact I have no personal acquaintance with any of their publishers, and sufferers will do well to call on them before purchasing, in order to obtain further information." As this fellow pretends to refer to us, we say if any one has any nasty disease for which this nasty medicine is advertised, don't follow the pamphlet which is sent out privately and is to be had by addressing this quack medicine vendor's New York or Philadelphia shops. Don't buy the medicine, but go to a regular doctor. But if you think the Independent's endorsement, by admitting the advertisement, outweighs our condemnation, and will buy his stuff, take out the exact price and leave your pocket book at home. Our "good name" having been stolen, we really don't know what might happen to your "parse." The fellow is quite right in saying he has "no personal acquaintance with the publishers," and we give him the benefit of the only truth he has stated about us.

Pigeons Destroying Grain.

—"H. C. T." of Morristown, N. J., gives us the following figures: Having shot a pair of wild pigeons on a wheat field, after they had had time to pretty well fill themselves, he counted in the crop of the hen 420 grains of wheat; in that of the cock, 361. Afterwards a tame pair were shot under nearly the same circumstances, and 271 grains found in the hen pigeon, and 132 only in the cock.

Mulching Apple Trees.

—"G. L." Warwick, R. I. We have no experience in the matter, but have no doubt of its utility. Pear trees are very much benefited by a mulch during the summer. Capt. G. Pierce, of Arlington, Mass., spreads about a ton of salt hay to the acre in his apple orchard, and thinks it pays.

Worms on Trees.

—"H. C. T." Lansingburg. The English sparrows have cleaned the trees of worms in New York and vicinity, wherever they have been welcomed. They are sheltered in small boxes, are fed on seeds and watered constantly in winter, and in summer take care of themselves. Just how much damage they would do in a garden we cannot say. They would certainly keep the insects in check, and if the birds became too numerous they could readily be disposed of.

Why Use Muck in Barns and Stables.

—"O. D. T." Fairfield.—Mainly to prevent the waste of the most valuable parts of the manure. Muck or peat absorbs the ammonia, adds to the bulk and value of stable manure, and for most farmers its cartage pays.

Chimney Tops.

—"H. J. S." Hestonville, Pa., advises to lay the bricks of chimney tops in Roman cement, in order to prevent (measurably) the corrosive action of coal gas and of the weather on the mortar.

Tight Barns.

—"R. S." Walpole, Mass.—Modern barns are made tight, and furnished with ventilators at the top. It is of great importance that the ventilation should be regulated, which is quite impossible with wide cracks between the planking. It saves a great deal of fodder to have the temperature kept above freezing point in the stables, and this is quite practicable with tight floors and good ventilation, even in New England, and other places, where the winter is severe.

Salmon Hatching in New Hampshire.

—The impregnated eggs in the hatching works at Charlestown, deposited by the fish commissioners, have been successfully hatched. Only one per cent failed. These fish will be artificially bred until the spring of 1869, when they will be ready to go to the sea. It is demonstrated that fish can be raised cheaper than any other animal food, and can be made abundant even in the densely populated districts of Central Europe.

Whitlock's Horticultural Advertiser.

—Mr. Whitlock, in connexion with his "All Nurseries in One," publishes a journal which is in the main devoted to advertising, but has always much interesting and valuable reading matter. The increase of Mr. W.'s business has made it necessary for him to engage the editorial assistance of Mr. A. S. Fuller. Mr. F. is one of the few "practical men," to use the current phrase, who can write well. He will doubtless give increased value and interest to Mr. Whitlock's useful journal.

A Handy Garden Trellis.

—It is often convenient to give tomato vines and other plants a low support, and some neat trellis is required.—"Reader," of Brooklyn, N. Y., sends us a drawing of a neat and easily made trellis, which, though not new to us, may be to some of our readers. He says: "I take a stave of a barrel, and split it into three pieces, sharpen one end of each and drive them into the ground, about a foot deep, in the form of a triangle, just so far apart that when a barrel hoop is



put around the tops, the outward strain will hold it in place; then tie on the hoop to the stakes, as shown in the engraving. I use small tarred rope, or "Ratlin" to tie with. These frames are made very easily, and when only a limited number of vines are kept, are very desirable."

Manure Sheds vs. Cellars.

—The same correspondent also asks: "Are not manure sheds generally preferable to cellars?" We do not know that they are. It is a question of convenience. No system, either of cellars, sheds, or open ground, is best in all places. And the best rule we can give is to adopt the plan that most economically provides a "tidy barn-yard" and a pure atmosphere. Good taste and good management go together, at least in this case.

Mohr on the Grape Vine.

—This little work on the vine has pleased us so much that we feel it a duty to call the attention of grape growers to it, as the most intelligent presentation of the principles of grape culture yet offered. Those who have read the articles in the *Agriculturist* on the vine, in the issues of the present year, will see that we have drawn upon this work for some interesting illustrations. To those who wish a set pattern by which to try to grow their vines, we do not commend this work, but to those who desire to study the habits of growth of the vine, and to know just what they are doing, the book of Dr. Mohr cannot fail to afford instruction. A most useful chapter on the propagation of American varieties is appended by the translator, "Horticola." A neat illustrated volume, sent by mail for \$1.

Applying Manure to Growing Crops.

—"J. Y. A." Oneondaga Co., N. Y. If from any cause broadcast manuring has been neglected, it is frequently desirable to apply manure to growing crops. This should be done before they are half grown. We have often used concentrated manures upon the grass crop with excellent results. It is easy to double what would be a light crop of hay, by applying Peruvian guano, or the fine ground fish guano, in the month of May. A great change is seen in the color and vigor of the grass, within two or three days after the application, if it is made in rainy weather. Ashes alone, or ashes and plaster, are good top-dressings for potatoes. Any of the concentrated fertilizers, if honestly made, will pay on the corn crop, at the first or second cultivating. All garden crops are benefited by top-dressings, and if these are applied in the form of liquid manure, so much the better.

Manure from Barn Cellars.

—A correspondent has seen it stated in an agricultural paper that the manure from a barn cellar "contains an injurious acid that needs to be corrected by frost," and asks the *Agriculturist* if such is the case. We know of no such acid. There are several organic acids formed during the decomposition of straw and manure, but the ammonia formed at the same time from the nitrogenous matter, urea, etc., neutralizes them, in part at least. And they are thus very useful in "fixing" the ammonia. When a great deal of peat is used in the cellar, large quantities of organic acids will be present in the manure, but so soils free from excess of water they will do good rather than harm. In case the manure has been kept so water-soaked that only imperfect fermentation has taken place, the best way, we think, to correct this would be to draw out the manure to the field, where it is to be used, and pile it for a few weeks to ferment, before spreading it on the land. In cold cellars, and where the pigs tread it very firm, it is not improbable that little or no fermentation takes place. But even in such a case, we think no acid would be formed from the manure. There are acids in peat and muck which resist decay, unless acted on by frost, by a ferment like animal manures, or by alkalies, like ammonia, ashes, lime, etc. By piling the manure, however, and turning it over once or twice, or in any way subjecting it to the influence of air as well as water, all difficulty of this kind would be overcome.

Cheap Homesteads in Missouri.

—D. S. Donegan, of Licking, Texas Co., Mo., sends an earnest invitation for settlers to come to that county. He says there is plenty of good, improved land to be bought at \$5 to \$10 per acre, with an abundance of cheap timber available, and other conveniences to match. The people are friendly, and glad to see settlers of all political creeds come among them. Churches and school-houses are springing up all over the county, as if by magic, and the whole region is rapidly filling up with a desirable class of residents. We receive many similar letters from different parts of the South, though this one is exceptional, in welcoming persons of all political creeds, as most of the writers stipulate that only "conservative" people, or those who will say nothing on "politics," are invited.

Sundry Humbugs.

—In our raids upon Humbugs, we have frequently set forth that all "Lotteries" are considered as humbugs. From time to time we have shown up the plans upon which they are operated; also how in every instance, where we have taken the pains to investigate any particular ones of the hundreds that come to us every month from all parts of the Union, we have found them to be entirely rotten and worthless. The worst are the *medicated humbugs*, for they not only rob one of his money, and in numerous cases out of twenty, of his health, but they also poison the soul by evil teachings and false physiology. Their pamphlets and circulars are generally sent to the young and thoughtless of both sexes, and do mischief by working upon their passions by highly wrought pictures and glowing descriptions. We give list of some humbug concerns without comment: Lotteries—C. A. Taylor & Co., New York; France Smith & Co., Cincinnati; Alex. Pope, Michigan; Murray, Eddy & Co., Cincinnati, Ohio; Perkins, Fisk & Co., Boston; Alonzo B. Cimb, Chicago, J. C. French & Co., Buffalo, N. Y., "Pictorial." A. G. Judd, Springfield, "Bad Money." Geo. Howard & Co., New York City, Curtin, Hall & Co., A. Weaver & Son, Eureka Print Works, cannot be found at numbers given. Broadway Publishing Co., New York, Books; Hill, Porter & Co., New York, Watches; Chas. Elmer, Williamsburg, N. Y.; T. Seymour & Co., Nassau-st., New York; &c., &c., all belong to the same class.—A few days ago, we made a journey to Kelley & Co., of Kelley's Weekly, to get our prize, valued at \$125, said to have been drawn for us at their first distribution, March 12th, 1868. Upon enquiring what the prize was, and if it was convertible into money, they stated that they did not know what the article was, but that they would send it to our address in fifteen days, if we would pay them their 5 per cent on the amount, or, if we preferred, we might call on April 15th, and it would then be opened to our inspection, to be taken at the same rate. If we chose. Wonder if it is Sandy River Petroleum Stock—which they have given in other instances! Has anybody received a valuable prize from A. Kelley & Co., either from their "Grand Gift Concert," or "Illustrated Weekly?"—Washington Library Co., or Geo. A. Cooke & Co., Bankers, New York. This "grand award of premiums," this "noble and patriotic cause," in the behalf of Soldiers' Orphans, said to be acting under a charter from the State of New Jersey, is a humbug... R. H. Homan & Co., Astoria, N. Y., we have only to notice as vendors of vile Medical Books, and to put our readers on their guard... Hallett, Moore & Co. can't sell us any of their "Unclaimed Prizes" for \$10.00 percentage, or any other price. We have seen enough of the Sandy River Petroleum Stock.

Wonder if they could tell us something about one "Elias," of Clark, Webster & Co.—Chas. Elmer & Co. is believed to be *alias* J. Birch & Co., of "Gold Cased" Hamburg-Time-Place notoriety, (see July No., 1867). Julia has lost her \$4.00. We visited the Champion Sewing Machine Co., to see one of their \$1.00 machines, but could neither find the man nor see a machine. These people have always "staked out" and left everything in the hands of the "clerk" (G!) who, as a general thing, knows nothing... Bradford, Van Delf & Co., Broad-st., had better make a lottery, and do with it, as their present scheme is no better... Beware of all Lotteries under guise of Pawnbroker's Sales, such as Perkins, Fisk & Co., Boston.—N. Z. There is a large class of swindlers in this city of which we will take for a type W. I. Wheeler & Co., dealers in Watches, Jewelry, etc. They sell tickets through agents; the choice of one from a lot is \$1.00. The holder of this ticket is entitled to a Watch or Set of Jewelry of some kind, by paying on presentation or through the mail the sum of \$10.00, more or less, and cost of packing, &c. The probability is that a person sending the money to them will get something in return, but not what they are led to believe by their advertisements. This jewelry, which they claim to be "good gold and silver," is neither gold or silver, in any proper sense, and the poorest sort of "sham." Their "Gold Duplex Watches" are not *gold* at all; their "Diamonds" are not diamonds; their solid gold rings are neither solid nor gold. Jewelry may be very well, if one is able and cares to wear it, but the false display by this showy cheap stuff is in bad taste.... J. B. Peters & Son, 267 Broadway, Watches, &c. The Post-Office Department, believing these people to be acting under an *alias*, have stopped giving up the letters to their address until they appear in person, and give satisfactory evidence to the effect that Peters is the true name. They have today, April 11th, "made tracks," and are nowhere to be found by us. Many people have sent letters and money to J. L. Peters, publishers of sheet music, intended for J. B. Peters & Son. These letters have been returned to the postmaster. Persons should avoid this error, for the first are respectable dealers, and the last named are, as Capt. Cuttle would say, "on the contrary quite the reverse."—The N. Y. Tribune publishes such stuff in the way of advertisements that we do not wonder at an occasional moral spasm in its editorial columns. It announces with much self-gratification that the Gettysburgh Asylum Swindle has closed its office, and refers those who invested their money, and got no returns, to the editors of those papers who have advertised the scheme. If any one is foolish enough to go to any paper for this purpose, we advise him to begin with the Tribune, as that has done quite as much as any other paper to advertise the Gettysburgh Swindle to the public.

Bees in May. By Wm. W. Cary.

Remove drone comb from the brooding chamber as much as possible, and supply its place with worker comb in movable comb frames. By the use of two or three pairs of clamps to a frame fastened by strings, or more expeditiously by small india rubber rings, even small pieces of comb may be turned to better use than in the melting pot. All drone comb in good condition may be rendered useful in surplus boxes. Box hives in which bees have died during the winter, if the combs are good, use for your early swarms—a furnished house is better than one with bare walls. Leave nothing undone in the way of preparation for swarming, and keep a good supply of neat surplus boxes. Guard all empty surplus combs against the bee moth by occasional fumigation and inspection. Some parts of the country are so little annoyed by this insect that but little caution is necessary, while in others, the utmost vigilance is required.

The Shenandoah Valley.—"E. T. B."

VI. Probably there is no better location in the country for grain and stock raising. The climate is healthful, the soil good, and a large number of Northern people have gone to there since the war. The time of lowest prices has probably past in that Valley. Congenial society and security, good schools and churches, are worth paying for.

What Agricultural College?—"A. N."

Westchester County. We are not able to advise you as to the best facilities for educating your son as a farmer. You will find a list of these Colleges in the Agricultural Annual for 1868, with some account of their endowments and course of instruction.

Saw-dust and Tan-bark-as Fertilizers.—"A Subscriber."

These substances are used as absorbents rather than for their manurial qualities; nevertheless, both contain enough to make them moderately valuable when decayed. Their chief beneficial action on the soil is mechanical—lightening up heavy soils, and giving sandy ones greater ability to withstand drought.

Excellent and Unpatented Bee-Feeder.

The bee-feeder shown in the accompanying engraving is one long used by Mr. Wm. Cary, and through him by his friends. As things go, one is surprised that it is not patented, superior as it is to the patented ones with which we are familiar. It consists of a wooden box 9x1, 3 inches deep outside, made of half-inch stuff, tacked together and the joints made tight with paint skins, and painted on the joints inside. There are two partitions (a, b), crossing the box. The sides, one of which is not represented, are higher than these partitions and higher also than the ends, and they are grooved, so that a pane of glass will slide in and form the cover or top. The partition a does not touch the glass, but a space is left large enough for the bees to pass between. The



glass rests upon the partition b, but does not cover the little bulkhead c, into which the syrup is poured, and which is not accessible to the bees. This partition does not go quite to the bottom, so that the syrup flows under it, and into the middle chamber d. The bulkhead e, which like the other is one inch wide, is the vestibule into which the bees enter through a hole which may be seen in the cut, but as the partition rests on the bottom, the syrup will not flow through. The central chamber is the feeding room, and it is divided lengthways by strips of stiff, rough veneering, set in saw kerfs, half an inch apart and not going quite to the floor. These prevent bees falling into the fluid and drowning, as they would otherwise do. Mr. Cary says: "The feeder holds about the quantity of syrup or honey which an ordinary stock will take up in one night, which is the safest time to feed. From its construction it will be seen to fill the requirements of a good feeder, as given in the April number. A modification of this feeder, made partly of tin, is preferable, and made by the quantity is not expensive."

Manuring in the Hill.—"A. C. S."

Maine. It is always desirable to give an early start to corn, or other hoed crops. The principal objection to the old practice of dropping a shovel of yard manure from the cart tail to each hill, is the great expense for labor. Concentrated composts used in small quantities in the hill are quite as effectual in promoting early growth, and require less labor. A good superphosphate, dropped in the hill at the rate of three hundred pounds to the acre, will pay very well. Unleached ashes also are economical, dropped in the hill or at the first hoeing. Pure bone-dust, one to three hundred pounds to the acre, will make a great difference in the yield of corn. Peruvian guano, mixed with six or eight times its bulk of peat or sifted loam, makes an excellent compost for the hill, and there is no objection to its use, but its high price. Fish guano, mixed with half the quantity of peat or earth, will pay abundantly.

Darwin's Great Work.—The Variation of Animals and Plants Under Domestication. By Charles Darwin.

Authorized edition, with a Preface to the American edition by the Author, and one by Professor Asa Gray. The most perfect edition yet published. The American edition of this remarkable work is now ready. An idea of its scope, though an incomplete one, is given on page 177. The first English edition was exhausted in a week, and a new one called for; in the reprint, Mr. Darwin included some additions, and sent us the sheets as soon as they were printed, together with many additions in manuscript. As these reached us just as our edition was in the hands of the binder, we were obliged to place them on pages prefixed to the work. If the American reader will mark in the text where these additions come in, he will have the work revised by the author up to the latest moment, and a more complete copy than even the latest English edition. Mr. Darwin, not knowing that Professor Gray had made a preface to the American edition, sent us one of his own, which puts his estimate of his own work so neatly and modestly that we chose to insert it. The book presents the most remarkable collection of facts concerning our domestic animals and plants yet brought together, and for this alone it is of the highest value. Not the least interesting portion of the work, to the thoughtful reader, are the speculative views of the author. In these the great problems of inheritance, reversion, influence of external conditions of life, development, and the like, are put in a new light

with remarkable clearness and force. The philosophical results derived from the discussion of domestic animals and plants find an application in all animals, including the human species. While the work will be not interesting only, but useful to every one engaged in propagating animals or plants, it commends itself none the less to the intelligent reader, who will find abundant food for thought, and to men of the medical and other learned professions, who cannot fail to be instructed by its contents. In two neat volumes, of over 500 pages each, illustrated. By mail for \$6-less than half the price of the imported work.

Special Humbug Notice.—With all our care, we have been humbugged ourselves. The wolf sometimes gets the sheep's clothing so nicely fitted that it takes some time to discover him. The wolf in this case is S. G. Sheaffer & Co., Hanover, Pa., and the deceptive fleece is the advertisement headed: "A beautiful puzzle picture," which appeared in the February issue of the *Agriculturist*. The facts are these. The advertisement was offered, the picture was sent to us, and regarding it as a harmless way of advertising a photographic establishment, and at the same time affording some amusement, the notice was admitted. We have since found out that this is all an ingenious way of introducing a lottery scheme. We can only make reparation to our readers by denouncing S. G. Sheaffer & Co. as among the meanest sort of humbugs. As they have gained access to our columns by such representations as the regular humbugs are too respectable to try, we will not insult the "regulars" by putting this interloper among them, but give him all the benefit he can derive from a special notice.

When to Cut Grass.—"P. H.," Florida, N. Y.—The tendency in the practice of the best farmers is to earlier cutting. If cut when in full bloom, it makes the sweetest and most nutritious hay. It takes longer to cure it, but its higher value pays for the extra labor.

Lime in Stables.—Bad Doctrine.

"Practical Farmer," a good friend of the *Agriculturist*, in a note on Horse Stables, advises the use of slaked lime, to remove the bad odors. He says, about one quart three times per week will be enough for four horses. "It will stop all offensive smell and destroy all noxious gases." His own experience corroborates his views, and he recommends the mingling of lime with the manure.—This is very unsafe advice. Lime in contact with moist animal substances not putrid, forms soapy compounds which do not readily decompose and throw off bad odors—but when decay has set in, as in the manure pile, lime will rapidly liberate ammonia, the most valuable ingredient of the manure, and it will be lost. So, after a while, also, the soapy compounds will be decomposed, and their ammonia escape. Gypsum is far preferable to lime, but not so active. Sun-dried and sifted loam, thoroughly dry, would, we think, be equally efficient with lime, and certainly no more costly.

Useful Household and Farm Articles.

In our premium list we offer many things pleasing and ornamental, and others really almost indispensable, which can easily be obtained by a little effort, and will continually add to the comfort and prosperity of the farmer. A fine modern plow in place of an old-style, cumbersome one is an addition to the farmer's wealth. Frequent use of a barometer would save many dollars in prompting in the getting of the hay before a rain storm. A good mower should be owned by every farmer. It will save his back and his money. Scales should be used in every house and barn. The proverb says, "Deliver all things by measure and weight," and it ought to be heeded. Have Fairbanks' Standard Scales in the kitchen, and prove which grocery man gives weight, and buy of him. Weigh butter and everything sold, and not *trust* that you are cheated. Weigh the chickens, and see which kinds are thriving and profitable. Have a Fairbanks in the barn, and weigh the pigs, and stock, and grain, and hay, and fertilizers, and thus know what is paying, and what is not. A little practice in this line will pay a hundred fold in money and satisfaction. These articles can be had by helping your neighbors by getting them to subscribe for the *Agriculturist*, which you can do.

A Lady's Experience.

—With such an extensive correspondence, we are obliged generally to give the substance of a whole letter in a single line. Had we room we should be glad to give the writer's style, but we cannot often indulge in this. A lady, who signs herself "Mouse-Ear," writes from her place on the Hudson so pleasant a letter that we give it entire, as a specimen of the many pleasant things we might print did space allow. She thus speaks of her last year's experience: "It may well be that many of your lady readers could tell more about the past season, than myself—its floral triumphs, its experimental discoveries, its small leafy disappointments here and there. For I am not rich enough to try all the

novelties of the season; nor always supplied with better skill than my own to bestow among my flowers. What they have, of human care, they generally get from me, and if my fingers are held fast with business or sickness, the flowers must wait. I will not say that they are always the gainers by this state of the case, but I am. I do not wish it changed, on the whole. Nobody knows what a garden is worth, who is a mere spectator there. Looking back over the season, I remember first very gratefully, how much kindness I received from different dealers in plants and seeds, and this ought to be a letter of thanks. It is wonderfully pleasant to have the hard lines of business softened down a little, and to have this thought of kindness come in. I cannot return the favor by large orders,—yet as it is all nonsense that desert roses are *wasted*, so it is often true that powerless thanks and secret good wishes do silently sweeten and freshen the air. All through the season a thought of gratitude hovered about my flowers—from the first purple crocus that bloomed in my window, to the last cox-comb that paled before the frost; from the time when hyacinths and tulips stood, 'ready for duty,' beneath the leafy covering of their beds, until even the sturdy chrysanthemums hung their heads in the November wind. Yes, and at the back of the house as well; for I know what turnip tops look like when their comfortable roots are in the ground, and never even imagine that strawberries grow on bushes. So my thanks cover a good deal of ground, reaching even from New York to Indiana. Did not Mr. A. M. Purdy send me a package of Purple Canes, marked 'good count,' which were certainly numbered off by somebody who quite *lost* count before he got through? Did not my half dozen chrysanthemums multiply in the hands of Mr. Peter Henderson, at a rate to bewilder any ordinary propagator of rare plants? As for Mr. Vick, everybody knows that he uses a sort of packing peculiarly his own; consisting of extra papers of seed, and that what you never sent for, and thought you couldn't afford! But what would my tulip bed have been, without the 'Mariage de ma Fille,' and 'Le Roi Poupin'? And how could I have missed the exquisite 'La Perouse,' and 'Tuba Flom,' among my hyacinths?—Or the lovely 'Victoria,' and 'Emperor' Asters?—Or the 'Branching German' Stocks—the fairest, I think, I ever saw?—Or, again, that fleecy white beauty of a chrysanthemum, with blossoms like balls of the lightest snow, come down through the stillest air? I suppose, Mr. Editor, you have no room for ecstasies, and therefore can admit but little feminine writing at a time; but I wish you'd let me say a word now and then about the season past. I'll try to be practical. You see, there are some things which you (being Editor) can hardly find out. For instance—do you know what a queer thing packing is; and what a *different* thing, in different hands? Mr. Vick's bulbs don't stir on their journey (the box is always too full for that). Mr. Henderson's plants each turned out of the pot with ball of earth entire, and, carefully and separately wrapped up, don't seem to know what has happened to them. My strawberries from South Bend came a little weary of their moist bandage, but no more; my cranberries from Plymouth were safe and grand in their gatta percha silk. So far so good, you will say. But then the packer of small orders at one great firm is not a careful man. My young fruit trees had not much but the box around them, and the roses seemed to be hid in on top to pack themselves—and the roses don't like it; while my *Nelsotte* Augusta came looking as if it had but just stepped out of the green-house of Mr. Bliss, and was all ready for action. The Rochester roses were fresh and charming as soon as they could get their wits together. I will say that. Do all your readers know the fragrance of the Hybrid Perpetual, 'Sousventre Henry Clay,' or the beauty of the perpetual moss rose, 'Saleb'; or Mme. Plantier's cloud of whiteness? Pleasure, civility, kindness—all those I received from dealers, the season past. Now, I want to ask a question. Has the pretty Daphne Cneorum any special idiosyncrasy that one is bound to respect? Two plants of it last year I had in succession, and both died. And plants seldom do that for me. The individuals were good—from Mr. Henderson: the soil, a generally approved sandy loam. [We have grown Daphne Cneorum, one of the most charming of little shrubs, on almost pure sand and in a very heavy soil, but in both cases it was sheltered from the hottest sun, and we think that too warm an exposure must have been the trouble in this case. Try again.]

Tree Belts.—H. Horton, Delaware Co., Iowa, writes: "Would it be well to enclose a farm with one or two rows of trees, forming a belt as a wind-break? Will it in any way affect the crops? Please tell me what you would advise, and what kind of tree, if any, would be best, and how and when planted."—It would be very well to put a belt of trees around the farm. The effect on the crops would be beneficial, except close to the trees. Some land must be given up to them. For simply a wind-break, we should use Norway Spruce and Austrian or White Pine. If fuel is an object, use Maples;

Sugar is best, but the White grows faster. Put the trees in two or three rows, with the trees in one row opposite the spaces in the other. Let them stand about twelve feet apart in the rows, which should be the same distance apart.

Tree Investigators.—Several have sent us circulars setting forth the claims of a "Tree Investigator," and asking our advice about investigating. As we do not know the composition of the article, we cannot speak with any certainty in the case. The circular is calculated to throw doubts on the matter, for it claims too much, and we do not wonder that people hesitate. With our present knowledge we advise our readers to let all tree medicines, "investigators," and the like, alone, and try for a while the effect of manure, lime, and ashes, keeping off insects, and giving the whole land up to the trees.

How Far Does it Pay to Haul Stable Manure?—A correspondent in the Country Gentleman takes exception to a remark, made in our February issue, that "four and a half miles is a long way to cart stable manure." We are glad of this, both for the information he gives, and for the opportunity it affords to express more fully our views upon this point. He says of the farmers in the neighborhood of Philadelphia: "They do not think fifteen or eighteen miles too far to haul stable manure, even at this enormous expense (from five to seven dollars a ton); and it is my experience, that the farmers who do it are the men whose farms are the most highly improved; the men who have the most money for improved machinery; and who are altogether the best of all among us." I could mention one of my acquaintances, whose last year, off a farm of eighty-five acres, sold \$1500 worth of hay in the Philadelphia market, besides keeping a large stock on the place. If it pays us to send hay and straw fifteen miles to market, it must pay to bring back a load of stable manure for every such load of hay or straw that goes off the farm. A ton of hay or straw sells for \$25 to \$30. A ton of manure brought back on the place costs \$5 to \$7. Who will say that the farmer who makes this exchange is not making money, and enriching his land? We certainly should not say it, for he has either to carry manure as his return load or go home empty. And yet, we think, he might do much better than to carry the stable manure, nine-tenths of which is carbon and water—articles to be had on his farm for the mere labor of handling. According to Dr. Voelcker's analysis, the mixed manures of the yard contain only \$4 worth of ammonia, phosphoric acid, and potash, per ton, and these are the only constituents usually taken into account in estimating the value of a fertilizer. These articles, which do the work of fertilizing, can be had in a much cheaper form, in concentrated fertilizers, and if a man has to cart manure even three or four miles, we claim that it is much more economical to buy and cart them, rather than stable manure, so large a part of which is worthless. In a ton of fine ground fish guano, you have by analysis as much fertilizing matter as there is in fifteen tons of stable manure, and it can be bought in quantity for nearly a third less than the stable manure at \$4 a ton. In a ton of Peruvian guano you have nearly a third more in value. In bone-dust, and in a good superphosphate, you have fertilizers in a concentrated form. If carting stable manure to the farm, as a return load, pays so well, would not carting the same value in one-tenth of the bulk or weight pay a great deal better?

Feeding Corn Meal to Milch Cows.

The types made us say last month, that it would pay to "feed milch cows all the corn meal they would eat." What we wrote was that with butter at 40 cents a pound, it would "pay to feed cows all the corn meal they will eat and convert into butter." It would be a great mistake to give milch cows or fattening beasts all the corn meal they would eat. It would be very likely to kill them.

There is far less need of cautioning most people against feeding too much than feeding too little. There is, however, a disposition on the part of many who feed meal to cows, to give a liberal supply for a short time, and then to stop altogether. The meal disappears rapidly, and they are frightened at the expense. With cows worth \$100 apiece and butter 40 cents a pound, there can be no doubt of the advantage of liberal feeding. But it must be done systematically. There is a very general opinion that corn meal is "too heating," and that it will dry up a milch cow. There can be no doubt that corn *is* heating—that is to say, it contains a large proportion of starch and oil. And this is just what we want for the production of butter. It is possible, however, that when corn meal is fed in large quantity, there may be a deficiency of nitrogenous or cheese-forming material. This is not likely to be the case when the pasture or the hay contains considerable clover. Clover contains much more nitrogenous matter than timothy and other grasses. When

cows are fed on timothy and a liberal allowance of corn meal, there may be an excessive quantity of fat-forming matter in the food. In such a case, pea meal, or oil-cake, or shorts, might be substituted for a part of the corn meal. Give a quart of corn meal and a quart of pea meal or oil-cake a day, or a quart of corn meal and two quarts of shorts. But when the cows have considerable clover there will be no danger in feeding two quarts of corn meal a day all through the summer. It will not dry up the cow, or if it does, such a cow is not worth keeping in the dairy. Better fat her and sell her for beef. We have never yet happened to meet with a cow that can be dried up with two, three, or four quarts of corn meal a day, when fed systematically through the whole year. If we could be sure of getting forty cents a pound for butter it will certainly pay to feed all the corn meal our cows will digest and turn into milk. Commence with a quart a day, and gradually increase it as the milk increases. Let the cows have access to fresh water at all times, and salt them regularly once a week, but not to excessive quantity. Treat them gently, care occasionally, milk regularly, and strip clean. Give good pasture or other succulent food, and if corn meal, with a little pea meal or oil-cake, or shorts, dries up the milk, we should like to know the fact.

Culture of Field Peas.

We have for many years advocated the more extensive cultivation of peas and beans, as a means of enriching the land. They contain twice as much nitrogen as wheat and corn, and consequently make rich manure. A crop of peas of forty bushels per acre contains in seed and straw about 120 pounds of nitrogen, while a crop of wheat of forty bushels per acre, in seed and straw (calculating the straw to weigh as much as the grain, which we think, is about the average in this climate), contains about 37 pounds of nitrogen. Peas, Beans, and Clover, are all leguminous plants (i. e., belong to the pea family) and all contain a large proportion of nitrogen. When consumed on the farm they afford rich manure. The manure from a bushel of peas is worth as much again as the manure from a bushel of corn.

Where peas can be grown and consumed on the farm, therefore, they are eminently a renovating crop. On the other hand, if sold, they remove more fertilizing elements from the farm than a crop of wheat or barley. Peas do well on sod land, and are generally grown as a crop to precede winter wheat. On an old, tough, Timothy sod this is not a good rotation. The peas may do well, but the sod is seldom sufficiently rotted to produce good wheat. On a two or three year old clover sod the practice of sowing peas to be followed by wheat is a good one, provided the land is rich enough, or can be manured for the wheat. If the peas were drilled in rows a foot apart, and we had a good horse hoe, that would hoe ten or twelve rows at once, there can be no doubt that peas might be extensively grown on wheat farms, to great advantage—provided always that they are fed out and not sold. If not hoed, it is very important to secure a large growth of vines, so that they may smother the weeds. We have had wheat after a heavy crop of peas, that was as clean as if the land had been well summer-fallowed, and far cleaner than it frequently is after a poor, neglected summer-fallow. But on poor, dirty land, a crop of peas soon rather late in a wet spring, followed in a week or two by such a drought as we had last season, is about the worst preparation for wheat that can be adopted. The fact is, all our renovating crops, such as peas, beans, clover, turnips, and other roots, need clean, rich land, and the best of culture. Occasionally, in a wet season, a large crop is obtained on poor, badly cultivated land, but this is the exception. Generally such treatment results in half a crop of peas and a full crop of weeds—requiring more labor to harvest them and leaving the land foul. It is best to sow peas with a drill, but if this cannot be done, take great pains in plowing the land, and sow the peas on the furrows without previous harrowing. The seed will roll into the hollows between the furrows, and the harrow, passed lengthwise of the furrows, will cover them. Share's harrow, with steel teeth, is a good implement to cover peas. As the object is to get a heavy, smothering crop, it is well to seed thick, say three bushels per acre, or if large peas, three and a half. The small Canada creeper is the kind usually raised in Western New York. Fortunately the pea bug attacks our peas and renders them unsalable. They can only be mixed for the purpose of feeding out on the farm. There is nothing better for hogs, especially in connection with corn. If fed out by the middle of November the bugs do comparatively little damage. Many farmers feed them to pigs, straw and all, without thrashing. This will answer very well while the crop is green, and the pigs will eat nearly all the vines, but when the crop is matured it is a wasteful and slovenly practice. If the peas are properly cured, the straw, especially if a large crop, makes excellent fodder for sheep, and should be carefully saved.

Don't Let Potatoes "Mix in the Hill."

"Do potatoes ever mix in the hill?"—Potatoes are very apt to be mixed in the hill, and it requires constant care not to suffer loss in this way, for mixed potatoes never will bring so high a price in market as they would were the kinds separate. The mixture always takes place either *at or before planting, or after digging.* The question may be discussed till doomsday with some people, and never be decided, for the simple reason that some people are exceedingly careless with their seed potatoes. It is not unusual to see, that the soil and manner of culture, manure, amount of weeds, etc., have a decided effect upon the external appearance of the potatoes. These things affect the tops, the roots, the tubers externally, and their internal character. The color and markings are perhaps least affected; the form is subject to considerable change; the texture of the skin to still more; and it may be and probably is true, that after cultivating a variety for many years under similar circumstances, a decided change of appearance and character may be established. This, however, very rarely occurs, and the possibility of such a thing may be entirely disregarded in planting potatoes, except to throw out any peculiar looking ones which may be noticed when the seed is cut. Different kinds of potatoes may be planted in contiguous rows, as well as otherwise. In fact, this is the best way of comparing the productiveness of different varieties—two rows across the field being planted with each kind, repeating the same kind two or three times, to give all an even chance.

Why Heap up Manure ?

The old-fashioned practice of composting all the contents of the yard, the sties, and the stables, is attended with much labor, and is often imperfectly done, or neglected altogether, from want of conviction of its utility. There are the same materials before and after the heaping, the farmer reasons; why will they not benefit the land as much in the one condition as in the other? The question is fairly put, and demands an answer. There are not necessarily the same materials in a compost heap before and after fermentation. If the contents of a yard were swamp-muck, peat, surface loam, various kinds of straw, sea-weed, kelp, and the manure of horses, sheep, and cattle, and if to these was added fresh sty manure, or night soil, or a few bushels of lime or ashes, the whole mass would be thrown into fermentation, and new chemical combinations would take place, and the new compounds would be more immediately available for plant food. Just how much the mass would be benefited by these new combinations we may not be able to state, but no intelligent farmer has any doubt of the higher value of fermented compost, for ordinary farm purposes. Another great advantage from this work is the increased fitness of the manure. Stable manure is often carried out and spread in great frozen or dried lumps, and in this condition is plowed into the ground. It doubtless benefits the soil in this condition, but the roots of plants are a long time in getting at their food. We think it pays to fork over a manure heap twice, and give it the full benefit of a second fermentation. The hay and straw are all broken down by this process, and all the materials of the mass are thoroughly mixed. Much of the immediate effect of manure depends upon its fitness. The time usually allowed for composting is quite too

short. The greatly increased effect of well-rotted manure has led some to wish for a whole year to complete the process. This is one of the points that we should like to see accurately determined on an experimental farm. The liquefying of all the yard manures is doubtless better than any commination that we can attain by rotting, but the necessary apparatus for doing this, and applying it economically to the fields, requires more capital than most farmers have to invest. Thorough composting is within the means of all, and would always pay.

The Jerusalem Artichoke.

BY JULIUS MEYER, EGG HARBOR CITY, N. J.

Having cultivated the Jerusalem Artichoke (*Tobiananbur*, in German), with advantage during a number of years in the cold climate of Northern Pennsylvania, on the top of the Alleghany Mountains, I am enabled to complete the report of your correspondent from Rome, Ga., in the number for March. The Artichokes must be cultivated on a field by themselves, out of the regular rotation of crops, because they are difficult to exterminate; they may remain, however, on the same field any number of years, if they are only manured every second or third year. Although they give a good return on poor soils, they will pay the better the more manure they get; I harvested, upon an average, half the number of bushels more than I did of potatoes on equally manured and cultivated fields. They had the advantage of not being touched by the rot, while at the same time the third part of the potatoes were rotten. The soil was a sandy clay, containing no lime, but considerable iron,—a soil which may be classified as third rate. My method of cultivation was as follows: I plowed the field in the fall, cross-plowed in the spring as soon as the ground would admit, which generally did not occur there before the latter part of April, harrowed, and then with a one-horse plow made furrows 4 inches deep at 3 feet apart. I laid the Artichokes about 20 inches apart in the furrows, and covered them with the plow. I planted once in the fall, but found the soil too much settled in the spring; therefore I prefer planting at the latter time. About a week or a fortnight after planting, (according to the weather,) I went over the field with a light harrow, to loosen the soil and kill the young weeds. During the summer I went through with the cultivator three times. In the first week of October the stalks were cut with a sickle and put in shocks; in the third year a cradle may be used to advantage, where they are dense and the stalks not too stout; the leaves turn black while drying. Lacking room in my barn, I left the stalks standing in the field, and hauled them in whenever they were needed for food; if they are put together in large shocks, when dry and topped well, they may be left in the field a long time without spoiling. I fed the stalks without cutting them up, and if not given in too large quantities at once to the cattle, they would not leave a particle of them. Whenever they had the choice they preferred them to corn stalks, although the latter were cut before the frost killed them. The Artichokes may be dug any time during the fall or winter, but as the frost does not spoil them in the ground, I left them always in until spring, because, being fresh and juicy, at that time they are of great value as food for new milch cows, causing them to give a good supply of very rich milk. Horses, old and young cattle, sheep, and swine, all devour them with avidity; horses fed with them need but little

oats. As soon as the ground was sufficiently dry in the spring I commenced plowing them out; they were picked up clean; some time afterwards, before they commenced growing too much, harrowed once or twice and picked up again, and yet there were always enough left in for seed. In the second year the cultivation in rows must generally cease; the dense growth keeps the weeds down pretty well. In the third year and afterwards, they frequently grow so dense that large quantities of feed can be pulled out during the early part of summer. After the third year, when the knolls are plowed out, the soil should be manured heavily; the more frequently this is done afterwards the better; wood ashes have a good effect. I consider the Artichokes as nutritious as the potatoes; they contain but little starch, but in place of that more saccharine matter than even the sugar beet. I like to eat them raw, but do not care for them boiled; tastes differ, however. Let me shortly recapitulate the good qualities of the Artichoke: 1. They grow in all dry soils. 2. All kinds of cattle devour them eagerly. 3. They are not subject to the rot. 4. The frost does not spoil them; therefore they cause no expense, like potatoes and turnips, to keep them during the winter. 5. They need not be planted anew every year and require but little culture after the first year. 6. The stalks are consumed by horses, sheep, and cattle; when dry, they may be used as fuel, particularly for heating baking ovens; when cut up, they give good bedding for swine, as the pith in them will retain a good deal of urine.

I know of no plant raised for the purpose of food for cattle, which gives so much net profit as the Artichoke, and I think every one having cattle to feed ought to have at least one acre planted with them; as soon as I get my new farm here cleared, I shall devote several acres to the cultivation of Artichokes.

The Giraffe—Mending a Broken Jaw.

A delicate surgical operation is always interesting and instructive; but when such an one is performed upon an animal like the Giraffe saved from the burning of Barnum's Museum, an animal whose history and natural history are so interesting, and whose money value to its owners is so great, it is certainly worth while for us to chronicle it particularly. The Giraffe is perhaps more familiarly known as the Camelopard (pronounced improperly camel-leopard). The Latin name is *Camelopardalis Girafa*, the generic name meaning the "spotted camel," as leopard means the "spotted lion." It is a ruminant animal, closely allied to the camel, antelope, and deer. It has cloven hoofs, and peculiar, permanent, bony horns, covered with skin and hair. These animals come from Africa. They are easily and perfectly domesticated, and breed readily in confinement. They have prehensile tongues, with which they can pick fruit, leaves, etc., above their heads. Adult animals stand from 14 to 18 feet high, and eat about as much as a pair of oxen. The beautiful specimen of this wonderful species alluded to has doubtless been seen by great numbers of the readers of the *Agriculturist*, as it has been for five years the property of its present owners; it was valued by them, we understand, at \$20,000, or more. It is a female, and was calved seven years since at the Zoological Gardens in Regents Park, London. She was rescued from the fire with great difficulty, falling upon the steps, and in the fall breaking her under jaw, and being considerably burned before she was gotten away. She has

been under the care of Dr. A. Liautard, of the New York College of Veterinary Surgeons, who gives the following description of her case:

"I found her on the afternoon of the day of the fire, (Tuesday, March 3d), then suffering from a large but superficial burn of the right hip, and also from a fracture of the lower jaw. This fracture, on examination, proved to be transverse through both branches of the lower jaw bone, where they are quite close to each other. The animal was removed to the infirmary of the college on the following Thursday. In the afternoon she laid down; being then secured by means of ropes and hobbles, and covered with a heavy canvas, she was kept down, and with the very kind assistance of Prof. John Gangee, of London, and Prof. A. Large, of Brooklyn, I reduced her fracture in the following manner: Two holes were pierced with a very fine drill, through both sides of the jaw, one in front of

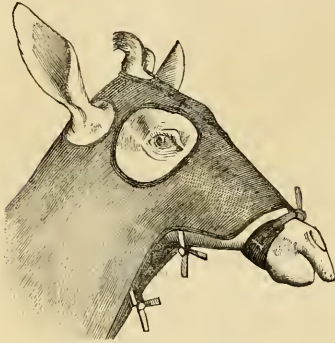


Fig. 1.—HEAD OF GIRAFFE.

the fracture, the other behind, as shown in fig. 2. A broad piece of thick sole leather was prepared, which may be seen in fig. 1, the central part to rest on the jaw, the ends extending upwards on each side, a little behind the corners of the mouth. A silver wire was first introduced through the leather, then passed through the jaw, through the other end of the



Fig. 2.—JAW OF GIRAFFE.

leather, and back again, as shown in fig. 3. The ends were secured by several twists, and the fractured ends of bone brought closely in contact. The narrow space between the two branches of the bone prevented my making two separate sutures, and at the same time favored the operation in opposing lateral displacement. A piece of webbing passed through eyes pierced

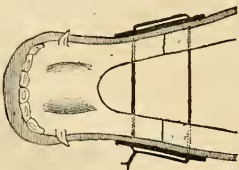


Fig. 3.—HORIZONTAL SECTION OF JAW.

in the leather was fastened over the nose, and then round the horns, to prevent the bandage from slipping down, and pads of oakum were put near the skin, where necessary, to pre-

vent chafing. The operation lasted 20 minutes; she stood it quietly, and was afterwards allowed to get up. She has been fed with thick oat-meal gruel and milk, and her general condition has been improving every day. The burn has been treated on general principles, and the chances are that she will soon be able to eat full rations."

This operation, which, up to the time of our going to press, promises to be so successful, might have been equally well performed upon a horse or an ox, and suggests a ready means of bringing the parts of a fractured bone together, applicable under many similar circumstances.

The Corn Crop.

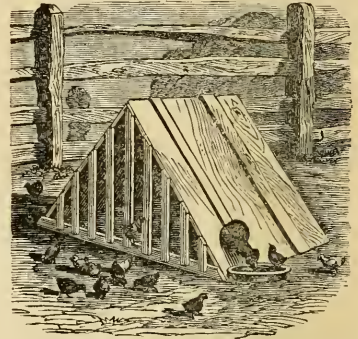
There is not the shadow of a doubt that there will be an immense breadth of corn put in this year in all parts of the United States. The prices which have prevailed, both East and West, would be stimulus enough, were there no other reason, and there are many. Facilities for transportation have increased; the dullness of trade and manufactures has reinforced the ranks of tillers of the soil; labor is less expensive; and every thing tends to induce extensive planting of our great staples. In regard to preparation of the soil, we earnestly advocate thoroughness, and abundant manuring. Who ever saw land too rich for corn, if properly cultivated? The plowing should be deep; the manure incorporated with the soil; and the harrowing and tillage previous to planting, in proportion to the amount of weed seed in the land, or grass and sorrel which repeated harrowings or rakings are required to eradicate. The first of May should see the land plowed, especially if it is given to being weedy, and if the weather is warm and the weeds start, about once a week the harrow should be thoroughly put over it, and across it. The land gains enough to pay for the extra labor, and there may be multitudes of weeds destroyed in the seed-leaf. Tillage by horse-power, before the crop is planted, may be much more thorough than any subsequent working it can have, except careful hand-hoeing. In regard to what kind of corn to plant, we say take the earliest that yields good crops. Select medium-sized ears, well filled out, compact, even-rowed, and close at the butts. As a rule, rather small-stalked kinds are preferable—they may be planted closer, and do not shut out so much sunlight from the soil, and when the proper distance to have the plants or hills apart is known and followed, we think they yield the largest crop. Be sure that the variety will mature early for your latitude—then one fruitful source of disappointment and loss is shunned.

As to planting, we say be in no hurry, provided the corn is just coming up by the first of June. Much excellent corn is raised every year which is planted after the first of June. It is far more important to have an early kind, and to have one crop of seedling weeds killed, than to plant before that date. This observation applies with especial force to the country north of the latitude of Washington. The warm weather which reaches us in June above that parallel comes earlier to the Southern States. Whenever it may come, corn waits for it—and we see little vigorous growth of this crop before we have hot summer weather. The rows should be put so far apart that as much as possible of the tillage may be done by horse-power. This is the limit of closeness, and cannot practically be less than three feet, except for dwarf varieties. Plant in *drills*, dropping the kernels so that they will average about two to the running foot.

This will be an allowance of fully one-third for worms, etc., which leaves enough, and ordinarily too much, to stand. It must be thinned out as soon as danger from the cut-worm and grub has passed. Summer cultivation comes in June, and until then we will defer its consideration.

Pure Water for Hens and Chickens.

Pure water is essential to the health of chickens. It should be changed frequently, and no dirt allowed to contaminate their vessel. We have been annoyed not to be able to set a shallow vessel of water close to the coop, so that the old hen can drink and not have it filled with dirt from the floor of the coop, thrown into it by her scratching. This is supposed to contain the eggs of the gap-worms, which are taken into the throats of the chickens with the water, either before or just after hatching. Whether this view is true or not, pure water is scarcely the less a great desideratum, and it has been an



PURE WATER COOP.

important problem how to secure it." If we are not mistaken, this question has been somewhere proposed to our readers, but the method exhibited in the accompanying engraving has suggested itself to us, and has been carried into effect thus far with so great satisfaction that we describe it to our readers. The water dish is set at the side of the coop, and a hole is cut so that the hen may put her head through conveniently and drink. If she scratches hard enough to throw dirt through the hole, in all probability it will overshoot the water. We may find it necessary after the hen learns where to go to drink, to tack a light curtain of cloth partly over the hole. We think this plan will prove effectively useful in preventing the gaps.

Varieties and Variation.

That animals and plants vary, i. e., the child is not always in all respects like its parent, must be admitted by all. That the peculiarities which mark this variation may be transmitted, and that by breeding from animals possessing desirable peculiarities in the most marked degree, a race may be so well established that it is quite certain to "come true every time" is known to every stock-breeder and every intelligent farmer. How great these variations, what a difference from the wild type of animals and plants our domestic ones present—a difference caused by man's agency in selecting for perpetuation those possessing qualities best suited to his use or his fancy—few are aware. It remained for Mr. Charles Darwin, the distinguished English naturalist, to bring together in his recent work, on

the "Variation of Animals and Plants under Domestication," a host of the most interesting, we might almost say startling, facts bearing on these points. One cannot peruse this book without wonder at the industry that has brought together so much widely scattered material, without being impressed with the wonderful power that man has, often unconsciously, exercised over the brute creation, in modifying not only their habits, but their very structure, and without gratitude to the Creator that He has so formed the creatures over which He has given man dominion, that they should be not only subject to his will in the sense of subordination, but to his will in adapting themselves to his uses. The laws which seem to govern these variations, the effects, good and bad, of crossing and close breeding, inheritance, influence of food, climate, etc., and all matters relating to the subject, are discussed with a clearness and thoroughness, that have made the book, to us, not only instructive but fascinating. It is a book to be studied, and thought over, and referred to. We

for man, and reciprocally man has done a great deal for the hog—"A fellow-feeling makes us wondrous kind." Look at the portraits in figure 1. The upper head is that of a Wild Boar—not altogether unlike some tame ones we have

A comparison of these skulls shows how much the domestic races have departed from the wild type, in shape of the bones of the head, length and character of the bill, and the like.

Mr. Darwin has much that is interesting to say about fowls, the numerous breeds of which he considers to have originated from one wild species. Strange, indeed, that a species should have varied so greatly as to give us the tiny Bantam and the enormous Cochin, the Black Spanish, (fig. 3,) with its immense single comb and white face, and the Hamburg, (fig. 4,) with its flat, curiously pointed, and marked comb!

It is not our purpose to review Mr. Darwin's book, for our limits would not allow of that. We can only say, that no one has discussed the subjects of which he treats with so much ability. He has given us a store of facts, and the explanation of the

wonderful variations in our domestic animals and plants that seem to him indicated by these facts. In the above we have omitted all reference to Mr. Darwin's facts and investigations with respect to plants. Some of these are



Fig. 3.—BLACK SPANISH FOWL.



Fig. 4.—HAMBURG FOWL.



Fig. 1.—HEADS OF WILD BOAR AND YORKSHIRE HOG.

are tempted to give a few of Mr. Darwin's figures, as illustrations of some of the remarkable instances of variation, and in doing so we select those that are within the observation of most of our readers. The hog has done a great deal

seen—while the lower is from a photograph of "Golden Days," of the Yorkshire breed. What a difference in the development of the head—a difference which is equally marked in the legs, and in the whole structure of the animal. When man found it inconvenient to go out and shoot wild pork, he began to grow it in pens. Man had a fondness for ham and good pork, and he bred from animals likely to furnish these, while the pig, not being obliged to seek its own living, had less use for snout and legs. Thus the two, man and pig, unconsciously, it may be, produced the result here shown. We not only get more pork from the carefully bred animals, but the animal gets less head. In the common breeds the head is in length to that of the body, as 1 to 6, while in the highly cultivated races it is as 1 to 9, and even 1 to 11; and so with length of legs, size of hams, character of hair, skin, etc.

Cattle, horses, sheep, dogs, and other quadrupeds are treated in a most interesting way, and many curious points in their history developed. Upon birds, especially upon pigeons, Mr. Darwin is very full. Pigeons are bred so largely for "fancy," vary so widely, and in so few generations, that they afford striking illustrations of the variation produced through the agency of man. The fine group of pigeons we gave last month shows some of the widely differing forms. These are, however, but few among the many breeds known to fanciers, and as unlike as they are, they are all traced back, with considerable certainty, to the wild pigeon of Europe. In a long course of breeding, these varieties have departed widely from the original type, and from one another. Not only do they differ in particulars that are noticeable at sight, but the skeleton is changed in various ways.

Figure 2 shows the skulls of some of the varieties. A is the skull of the Wild Rock Pigeon; B, the Short-faced Tumbler; C, the English Carrier; and D, the Bagsdotten Carrier.

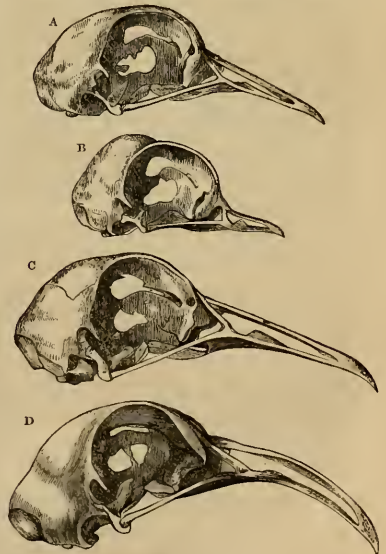


Fig. 2.—SKULLS OF PIGEONS.

from experiments of his own, developing some exceedingly curious facts in fertilization, and attended with results of great interest to the botanist and the general cultivator. Some may not agree with his views, but none can deny the force and fairness with which they are put,

Walks and Talks on the Farm.—No. 53.

Do you recollect a conversation we had about the system adopted by the Herkimer County dairymen, of breeding and feeding cows solely for milk, without any reference to their value for beef when they were no longer profitable for the dairy? I endeavored to show that at the present price of beef it would be better to keep a cow five years and then sell her for beef, and get another and keep her five years and sell her also for beef, than it was to keep one cow ten years until she was "used up" and of little value except for the hide. In the latter case, we figured a total profit of \$210 in the ten years; and in the former case, a profit of \$125 in five years on one cow, and consequently a total profit on the two cows during the ten years of \$250. (See *Agriculturist* for Feb., p. 54.)

A Cortland Co. farmer writes that I have made a mistake—that the profit on the old cow is \$210, and on the young cow \$125, and that consequently the present system of keeping cows until they are used up is more profitable than of turning them off at an earlier age for beef. He overlooks the fact that in the latter case we have two cows instead of one. The profit in the ten years is just double what he supposes. There is no mistake, except that the profit on the young cow is \$130 instead of \$125, and consequently \$260 instead of \$250, a mistake which adds ten dollars to the strength of the argument. I was very careful not to overestimate the profits of the new system. I think it would be easy to show greater advantages than those which we claimed. With beef at famine prices it seems a pity to keep a cow until there is nothing left of her but skin and bones.

The same writer says: "Some other ideas of Walks and Talks in the February No. differ from what I believe dairymen around here hold to, as when he says: 'It takes more food to produce a pound of cheese than a pound of beef.' I cannot say he is mistaken, as I have not tested it." He then asks if the cow that produced 600 lbs. of cheese in a year would produce more than 600 lbs. of beef with the same food. Probably not. But a cow with equally good digestive organs, that is so constituted that all the food shall be changed into beef instead of into cheese, will gain a good deal more than 600 lbs. in live weight.

It is an extraordinary cow that will produce 600 lbs. of cheese in a year. Such a cow must necessarily eat a large amount of food, and of the best quality, and the probabilities are that at the commencement of the season she is in high condition, and as thin as a shadow at the end of it. In other words, although the season may not last over eight months, the food of the whole year is used to produce the 600 lbs. of cheese, and the calf. The flesh and fat she had stored up during the winter would all find their way to the milk-pail before the end of the summer. Mr. Sheldon's Short-horn calf weighed at 6 months old, 652 lbs.; at 9 months old, 923 lbs.; at 12 months, 1,216 lbs., and at 18 months, 1,806 lbs. Of course this is an extraordinary animal—but so is also the cow that will give 600 lbs. of cheese in a year. Both have splendid digestive organs, and both unquestionably had all the food they could digest and convert into beef or cheese. Had this animal been killed at twelve months old, he would have dressed at least 800 lbs. And you must recollect that in the case of the cow the machine for converting the food into cheese is already made—and it required at

least three years feeding to get the machine in running order. But this yearling Short-horn made nearly the whole of his own machine as he went along, and turned off 800 lbs. of beef.

But of course such facts as these prove nothing. They are not comparative. The main reason for supposing that a pound of cheese requires more food for its production than a pound of beef is this. Beef is derived from the blood of the animal, and so is cheese. Their origin is identical, and composition very similar. But there is far less water in cheese than there is in beef.

A first-class American cheese analysed by Dr. Voelcker contained in one hundred parts:

Water.....	27.29
Butter.....	35.41
Casien.....	33.87
Milk sugar, lactic acid, and extractive matters.....	6.21
Mineral matters, (Ash).....	5.22

Laves & Gilbert give the composition of the carcass of a fat calf, a half fat ox, and of a fat ox:

	Fat calf.	Half fat ox.	Fat ox.
Water.....	62.30	54.00	53.87
Fat.....	16.60	23.60	34.80
Nitrogenous compounds.....	16.60	17.90	15.00
Mineral matter (Ash).....	4.43	5.55	4.55

Look at these figures and tell me which would require the most food to produce it, a hundred pounds of cheese or a hundred pounds of beef? Take the half fat ox, (which is the condition in which most of our cattle are slaughtered), and it will be seen that the beef contains *twice* as much water as the cheese. If there was no water in the cheese, and no water in the beef, the composition per cent would be as follows:

	Cheese.	Beef.
Fat or Butter.....	43½	49
Nitrogenous compounds or Casien.....	33½	38½
Sugar, lactic acid, &c.....	8½	none.

The beef contains a little more fat than the cheese, and some 3 per cent more nitrogenous matter, but the cheese has 8½ per cent sugar, etc.

Looking at these figures as they stand, one would say that it took about as much food to make a pound of dried beef as a pound of dried cheese. But we do not sell beef and cheese in this chemically dry condition. As ordinarily sold, the cheese contains only about half as much water as the beef. The cow that makes 600 lbs. of cheese in a year has as much fat and nitrogenous matter extracted from her blood as would make about 900 lbs. of beef. And that this is all derived from the food directly or indirectly, no sane man will question. It takes, therefore, more food to produce a pound of cheese than a pound of beef.

The same writer thinks it a mistake to suppose "that enriching the land either by hoeing or manuring, causes it to grow richer grass." He thinks "2 tons of hay from two acres is worth more than 2 tons from one acre." Sometimes it is, and sometimes it is not. It depends on the character of the land and on the nature of the grass. Two tons of timothy from two acres of upland would be worth more than two tons of sedges, weeds, rushes, and coarse grass, from one acre of rich, swampy land. So far he is right. But this does not touch the point. Take a field of good, dry upland. Let half of it be enriched by thorough cultivation and manuring, and the grass on this half will be sweeter and more nutritious than on the other half. Top-dress an acre or two of pasture land with some rich, well-rotted manure. It will bring in finer grasses and thicken the sward, and the cows will very soon tell you which grass they like best. They will not touch the other grass as long as a bite can be obtained on the top-dressed portion.

This man is hard to please. He thinks every-

thing I said in the February No. is "faulty." He cannot see why high farming is any more necessary or profitable on high-priced land than on cheap land. He thinks "good farming pays the best anywhere." But we were not talking about good farming, but high farming. If he had written: "My idea is that high farming pays best anywhere," he would have met the case. And if he had thought a moment, he would have seen that this proposition is not true.

Good farming is sometimes high farming and sometimes not. Plowing under a crop of clover for wheat is frequently good farming, but it is anything but high farming. Summer-fallowing is often the best and cheapest way of cleaning and enriching land, and in such a case is good farming, but it is never high farming. High farming would summer-fallow the land and have a heavy crop growing at the same time. The market gardens around New York afford excellent examples of high farming. Read Henderson's interesting book on "Gardening for Profit," and you will get an idea of how much produce can be raised on an acre of land. They employ a working capital of \$300 an acre; underdrain thoroughly; use from 50 to 100 tons of manure on each acre every year; have two, three, and four crops in succession during the season on the same land; never let a weed show itself; pay from \$100 to \$300 an acre rent and taxes, and make a handsome profit besides. This is high farming.

They have to pay an enormous price for the land, and they *must* farm high, or not farm at all. They could not afford to let their land lie idle a year in order that they might summer-fallow or plow under a crop of clover. Where land is worth only \$50 an acre, we can afford to adopt a slower method of enriching it than when it is worth \$500, or even \$200 per acre.

He quotes my remark: "You can afford to pay more for manure that will double the crops on land worth \$150 per acre, than on land worth only \$50," and asks "Why so? If doubling the crops on good farms is profitable, why not on poor ones equally so?" Why not stick to the proposition? He should say, "If doubling the crops on land worth \$150 an acre, by using 400 lbs. of guano costing \$20, is profitable, why not on a farm worth only \$50 an acre?"

Had he put the question in this form he might have discovered a reason. You can afford to spend more time in order to double the interest on \$150 than to double it on \$50. Mark you, I did not say the Herkimer Co. dairy farms were worth \$150 to \$200 an acre. I only said *if* such was the case it would pay better to adopt high farming than it would on land worth only \$50 per acre. I can afford to spend \$30 an acre in underdraining my farm in Western New York, but it is very questionable whether \$30 an acre can be profitably spent in draining a farm in a section of Iowa, where good, dry land could be bought for \$10 an acre. Where corn is worth \$1.25 a bushel it may pay to expend 25 cents a bushel in grinding and cooking it for the hogs, but where corn is worth only 35 or 40 cents a bushel it would hardly pay to expend 25 cents a bushel for the purpose.

I have just sold 15 tons of straw to the paper men for \$150—they drawing it themselves—and the Deacon says he met Peart, the butcher, yesterday, who told him that he "was going to get some one to write an article for the papers giving me 'Hail Columbia' for preaching one thing and practising another."

Pity the sorrows of a poor old editor! I do not think it is a good plan, as a general rule, to

sell straw. Better buy oil-cake, and feed stock enough in the winter to consume all the straw, hay, corn stalks, etc., on the farm. This is what I preach, and this is what I practise as far as I can. I have laid out over \$3000 in the purchase of oil-cake, bone-dust, and other manures, during the last four years, and have not sold, to the best of my recollection, a ton of straw, or hay, or corn stalks before. To feed nothing but straw to stock is bad economy, and to rot it down for manure is no better. Straw itself is not worth over \$3 per ton for manure. And as one ton of straw will make in the spring of the year four tons of so-called manure, and as it costs about 50 cents a ton to draw it out and spread it, it only nets you, when fed out alone or rotted down, about \$1 a ton. I had about 30 tons of straw. Fed out alone or rotted down it would make 120 tons of manure. After deducting the expense of filling, hauling, and spreading, it nets me on the land, \$30. Now sell half the straw for \$150 and buy three tons of oil-cake to feed out with the other half, and you would have about seventy tons of manure. The manure from the fifteen tons of straw is worth, say \$15, and from the three tons of oil-cake, \$60, or \$105. It will cost \$35 to draw and spread it, and will thus net on the land \$70. So far as the manure question is concerned, therefore, it is far better to sell half your straw and buy oil-cake with the money than to feed it out alone—and I think it is also far better for the stock. Of course, it would be better for the farm not to sell any of the straw, and to buy six tons of oil-cake to feed out with it, but those of us who are short of capital must be content to bring up our land by slow degrees. Last fall, if I could have met with a nice thrifty lot of grade short-horn steers, coming three years old, and had had the money, there can be little doubt that it would have paid to have given six or seven cents a pound for them, and bought oil-cake to feed them in connection with my coarse fodder and clover hay. They would have brought ten cents a pound this spring. They would have paid handsomely for the oil-cake and hay, and something for the straw, besides furnishing a grand lot of rich manure. But even if I had had the money, the grade short-horns are not to be met with in this section, and so I did the best thing I could. If my oil-cake and clover hay manure does not tell next year on the wheat crop, I will revise my calculations as to its value. In the meantime, I have no sort of doubt that, after deducting the expense of drawing it out, oil-cake and half clover hay and half straw will make manure that is worth at least *six times* as much money as manure made from straw alone.

Geddes and I do not differ as much as you suppose. In fact I do not believe we differ at all. He has for many years been an earnest advocate for growing clover as a renovating crop. He thinks it by far the cheapest manure that can be obtained in this section. I agree with him most fully in all these particulars. He formed his opinion from experience and observation. I derived mine from the Rothamstead experiments. And the more I see of practical farming, the more am I satisfied of their truth. Clover is unquestionably the great renovating crop of American agriculture. A crop of clover equal to two tons of hay, when plowed under will furnish more ammonia to the soil than twenty tons of straw-made manure, drawn out fresh and wet in the spring, or than twelve tons of our ordinary barn-yard manure. No wonder Mr. Geddes and other in-

telligent farmers recommend plowing under clover as manure. I differ from them in no respect except this: that it is not absolutely essential to plow clover under in the green state in order to get its fertilizing effect; but, if made into hay, and this hay is fed to animals, and all the manure carefully saved, and returned to the land, there need be comparatively little loss. The animals will seldom take out more than five per cent of all the nitrogen furnished in the food—and less still of mineral matter. I advocate growing all the clover you possibly can—so does Mr. Geddes. He says, plow it under for manure. So say I—unless you can make more from feeding out the clover hay, than will pay you for waiting a year, and for cutting and curing the clover and drawing back the manure. If you plow it under, you are sure of it. There is no loss. In feeding it out, you may lose more or less from leaching, and injurious fermentation. But, of course, you need not lose anything, except the little that is retained in the flesh, or wool, or milk of the animals. As things are, on many farms (including, it may be, my own) it is perhaps best to plow under the clover for manure at once. As things ought to be, it is a most wasteful practice. If you know how to feed out the hay to advantage, and take pains to save the manure (and to add to its value by feeding oil-cake with it) it is far better to mow your clover, once for hay, and once for seed, than to plow it under. Buy oil-cake with the money got from the seed, and growing clover seed will not injure the land.

Some good wheat growers in this county mow their clover the first year for hay and for seed, and the next year pasture it till the middle of August or the 1st of September, and then plow it up and sow wheat, without any previous cultivation, and little, if any, harrowing. They say they get better Mediterranean wheat in this way than if the land was plowed in June or July, and "summer-fallowed." The straw is stouter and the grain yields better. If your land is clear and in good heart, I do not see why this is not an excellent plan. Wheat requires a firm foothold, and I have often thought that we not unfrequently get the surface soil, on light land, too loose and mellow. The time to clean and mellow the land for wheat is when it is in corn, two or three years previous. The Norfolk or Four Course System of Rotation, almost universal on the lighter soils of England is: 1st, Turnips; 2nd, Barley, seeded with clovers; 3rd, clover, hay or pasture; 4th, wheat. The labor is nearly all spent in preparing the land for the turnip crop. It is frequently plowed four times, and cultivated, harrowed and rolled repeatedly. Barley is sown as early as the land can be plowed, and got into good working order. The clovers are sown and harrowed in with a light harrow, and the roller is passed over the field when the barley is an inch or so high. Wheat is sown on the clover sod immediately after it is plowed. When sown broadcast, the land is not even harrowed, but the seed is sown on the furrows as left by the plow.

If our land was rich enough, and we treated corn as a "fallow crop," cultivating it until the soil was as mellow as an ash heap, we might adopt the same system. Sow the corn stubble with barley, and seed down heavily with clover. Pasture it but little, if any, in the fall, after the barley is harvested. Pasture it the next summer with sheep till the 1st of September. Plow and sow wheat at once. Seed down the wheat again with clover. Mow it for hay and feed

the next year. Then manure heavily and plant corn. The success of such a rotation will depend on the thoroughness with which the corn is cultivated. Generally our barley stubbles are overrun with weeds, and for this reason we do not more frequently seed down with barley.

The best thing to do with a seeded down barley stubble infested with weeds, is to run the mowing machine over it, and shave off the stubble, weeds, etc., close to the ground. I adopted this plan last fall on my wheat stubble, on some sandy knolls, that were full of thistles. It has checked them sufficiently to enable the clover to get the start of them this spring, and I think it will smother them out. The mowing machine is not appreciated as a means of destroying weeds as fully as it should be.

Imaginary Diseases, and Grub in the Head.

Could we have a report of all the diseases of which our domestic animals die, made out by their owners, the list would be a very instructive one. A few days since we were soberly assured by a farmer that he had lost two horses from feeding them corn stalks in the winter. We imagine it would be very hard to kill a horse with as many corn stalks as he could eat. Among the "archives" at the *Agriculturist* office we have many sure cures for horn-ail, and we have hardly a doubt but hundreds, if not thousands, of our readers might be induced to testify that their cattle had died of this disease. The temperature of the horns indicates in a measure the health of the animal. If the horns are hot, it is feverish; if cold, there is a lack of circulation—but of all parts of the body they are probably least liable to be affected by disease. We even doubt if they are ever primarily affected. Very much the same is true of sheep dying of grub in the head. There is no doubt about the distress caused by these parasites. The gadfly causes great distress when it deposits its eggs on the nose of the sheep after midsummer. The larva which soon hatches annoys the animal intensely when it ascends the nostril, and in spring the mature larva make the poor animals nearly wild and crazy when they leave their homes in the cavities of the head, and descending through the nostrils, come away—to burrow in the earth, and in about two months to reappear as perfect gad-flies. A correspondent, using the signature "Hermon," having 15 years' experience, has sent us some sensible notions on this subject, which we give:

"The nearly universal theory of grub-generation is undoubtedly correct. And it is also true that nearly every sheep has grubs in the spring; as may be proved by dissecting the heads of slaughtered sheep. Yet, who ever knew of a flock of sheep being attacked by the disease called grub in the head while they were being fattened for the butcher? Towards spring, when they have lost much flesh, from scanty food or lack of shelter, and sometimes both, the sheep will die. Then the farmer takes his ax, and splits the skull, where, sure enough, he finds the grub. This removes all doubt about the disease, and excuses him from all neglect, for 'the grub is incurable.' Now, if this same man should have sheep killed by dogs, and the heads should be found to contain grubs also, would he say the disease, or the dogs, were at fault? Sheep in reasonable condition in the fall, and kept thriving through the winter, are rarely, if ever, said to die of the grub. The more severely a sheep is afflicted by them, the more liable it is to become even worse the next winter. Hence

the wisdom of the advice of an excellent breeder, not to winter a sheep again, that has once fallen off badly. The appearance of a chronic catarrh is often the result of grubs, producing a constant inflammation of the membrane lining the cavities of the head. If sheep are seen to droop or show other symptoms of falling vigor, they should be put on the 'pension list' at once, and receive, in company with others of their class, the most palatable and nourishing food at command. This treatment, if seasonably attended to, will cure the 'grub,' if the sheep is not one that has become obnoxious to the disease, by former attacks, through which the animals' constitution was weakened by its efforts to expel the enemy. A sheep once on the 'pension list' should never be wintered again."

Home-made Tools.

A farmer ought to be a tolerable mechanic, and make, as well as mend, a great many things. Rainy day work is often advantageously that of the jack-plane and drawing-knife.

Harrows are frequently home-made—and we have seen some very good ones cheaply made and outlasting two or three of those made at the factory. The temptation on the farm is to make tools too heavy. In purchasing, the temptation is to spend little, and so not secure a first-rate article. The harrows made of a natural crotch are rarely seen nowadays, but still in their day were not to be despised. Good crotch-harrows for an "A" harrow are hard to find. Mr. R. T. Smith, of Ulster Co., N. Y., sends us a drawing of a harrow without the cross beam. The construction is obvious from the figure. The bolts are both necessary, not only to prevent the head opening, but to stop any tendency to twist. They are five-eighths iron

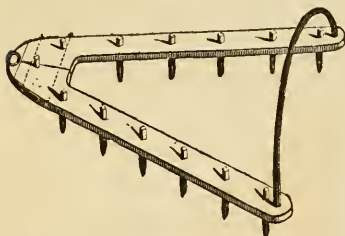


Fig. 1.—HARROW WITHOUT THE CROSS BEAM.

bolts with nuts. The shorter and front one passes through the strap-staple, on which is the draft ring. The teeth may be of iron or of wood; if the latter, 1½ inch oak pins are best. Holes should be bored diagonally in the ends of the harrow, to receive the ends of a bent pole reaching conveniently high for the plowman to lift the harrow by without stooping. Harrows are much used nowadays for giving potatoes and corn the first one or two hoeings. The cross piece in an "A" harrow is in the way in



Fig. 2.—WHIFFLETREE.

hoeing corn, the front part of the implement running usually high enough to clear the plants. In the one figured this difficulty is obviated. In hoeing corn the front tooth is always removed.

Whiffletrees.—It is usually quite as well to buy whiffletrees as to make them; but very good ones may be very easily made altogether of

wood, except the clevis. The one shown in fig. 2 is of 1½-inch ash, with a ¾-inch hole near each end to take a rope trace. A form more convenient, because adapted either to leather or

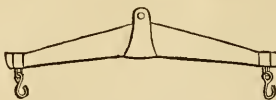


Fig. 3.—WHIFFLETREE.

chain traces, is shown in fig. 3, the trace hooks being attached to iron bands. Fig. 4 represents a very strong whiffletree. Eyes in which to fasten trace hooks are made in the ends of an iron rod of suitable length and strength, an eye or loop is made in the centre, and the rod riveted, as shown. The ends of the rod are either bent a little and braced apart by a stout piece of oak wood, being let into grooves in the wood and held by staples, or made with eyes to receive the ends of the wooden brace. In the former case, shown in the cut, the brace should have a bolt through each end, to prevent splitting. In this form lightness is consistent with great



Fig. 4.—WHIFFLETREE.

strength. The size of both iron and brace must be proportioned to the draft likely to be applied.

Facts in Shad Hatching.

The experiment of Seth Green, in hatching shad at Hadley Falls, last season, brought out several very interesting facts in regard to the ova of this fish. First: The eggs need river water to hatch in. He first tried his experiment in a brook, where the water was 13° too cold, and failed. Second: In the river, where the temperature was about 70°, the eggs hatched in 60 hours. Eggs have been hatched in a bottle, in a warmer temperature, in 48 hours. Third: By tilting his boxes, so as to expose only the wire gauze bottom to the current, he hatched almost every egg; only seven failing to hatch in one lot of 10,000. Fourth: With the utmost care, he could hatch on the natural river-bed only two per cent of the eggs—a fact most significant of the enormous loss in the natural method. Fifth: The young fry make directly for the main current of the river. Young trout, much more hardy than shad in after life, skulk under rocks and banks, helpless and almost too weak to move for forty days. Sixth: Young shad are armed with teeth and devour one another, although the adults have smooth jaws. This fact has been relied upon to prove that "sea shad," a fish caught with the hook along the mouths of creeks and coves of L. I. Sound, in the fall, are a distinct variety. They weigh from one to three pounds, and, to the careless observer, look like the river fish. Are they the yearling shad? Who can tell us? The brief period of incubation required for the eggs of this fish would indicate its rapid development and early decay. It is disputed at what age the shad matures its spawn, and returns to the rivers to breed. If the "sea shad," that take the hook, are identical with the river species, they are probably the fish in their second year, about half grown. At two years old, they reach maturity, and begin to breed. With the interest that is awakened by these experiments, it cannot be long before these questions are settled.

These facts, established in the operations of last year, demonstrate the entire success and economy of the efforts made in New England to restock their rivers with fish. Fish of any variety can be artificially bred in any desirable quantity, and turned into the streams where they are to grow. Man has in a measure control of these migratory fish, and with suitable legislation can make their enormous fecundity tributary to his support. The economy of the artificial over the natural method is much greater than we had supposed. It is nearly as fifty to one. Every river can be stocked with fish, at small cost, to the extreme limit of its capacity to nourish them. It will not cost so much to hatch a million of salmon in the upper waters of the Connecticut as it does to raise a single calf upon its banks. The finest varieties of fish ought to be the cheapest food in the market, and cannot fail to be, if all our States will follow the example of the New England States, and encourage artificial breeding.

Thatching with Straw.

Thatch makes a very serviceable and economical roof when well put on. It is highly picturesque, easily repaired, and usually requires no outlay of money, which with many farmers is a great advantage. The mode of making a thatch roof followed in the vicinity of New York is very simple. 1 inch × 1½ inch strips of wood (a, a, a, figs. 1 and 2) are nailed upon the rafters about 12 to 14 inches apart, one strip being at the very end of the rafters at the eaves. Rye straw is ordinarily used, because it is long and stiff. It is sprinkled and turned, to become uniformly moist; long, straight armfuls are selected by handfuls, and the first course is laid, beginning at the eaves. The butts rest upon the lowermost strip, and project over it. A set of light poles (b, b, b, figs. 1 and 2) are provided, one of which is placed upon the course of straw, and when enough has been laid, the pole is bound down to the strip beneath it at short intervals, according to the stiffness of the pole. This binding is usually done with split oak withes about 30 inches long, three-eighths of an inch wide, and a scant eighth of an inch thick, well soaked before using. These withes have one end sharpened, and an assistant passes each one up through the thatch from below; the thatcher turns it, and putting it over the pole,

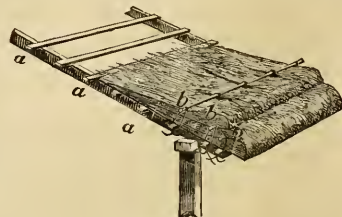


Fig. 1.—THATCHING.

passes it back again, when it is drawn tight, aided by pressure from above, twisted and one end tucked. The top layers are lapped, and the upper poles exposed to the weather; these should be bound with "galvanized" iron or copper wire. It has been customary of late years to depart from the old-fashioned practice of using oak strips for binding thatch, and to employ tarred rope yarn, which is drawn back and forth through the straw with a wooden needle, but time proves this to be unreliable, as it rots long before the withes do. We are inclined to think that wire

would be far better than either, though a little more expensive. There is a thatch roof on the farm adjoining that of the writer, which has

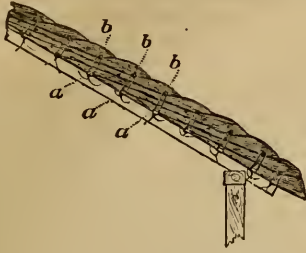


Fig. 2.—SECTION OF THATCH-ROOF.

been laid more than 20 years, and having had a little patching recently, is good now. The engravings represent the layers of straw very distinct, for the sake of illustrating the manner of putting them on. When finished, the thatch presents nearly an uniform surface, the eaves are clipped evenly, and the whole roof raked down. There is a great necessity for making the thatch of even thickness. The irregularities of one layer are counterbalanced in a measure by those above and below it, but care should be taken to have one about as thick as another; and it is desirable, in order to accomplish this, that the straw should be nearly of an uniform length.

Native Cattle.

We talk about native cattle; if by this we understand mongrels, nondescripts, or mixtures of the run-out blood of various breeds, then the name is misused. We should say "common cattle." If we use the name rightly, it would indicate that climate, feed, and treatment, had influenced the common stock of cattle, so that those of a particular district had become in many points very similar. This is not the case, so far as we know, anywhere in this country, except to a very limited extent, though we almost wonder at it. There was a time, a few years since, when it seemed as if we might expect to see such native breeds developed in various parts of our country; but the general dissemination of the improved British breeds has, we think, broken up any foundations of new breeds which might have been laid. The red cattle of Connecticut now have almost all a dash of North Devon blood, introduced within forty years; but previous to that the cattle having come from the south of England, where the prevalent color of the native breeds is red, and having been bred with some intelligence, had preserved their color and improved in form, so that, though differing essentially from any pure English breed, they yet agreed quite as well among themselves as some recognized breeds.

Throughout the older Northern States cattle have been bred for years for milk and veal more than for beef, and yet our common cows have never been reliable as milkers. It has even become proverbial that a good cow's heifer calves were rarely equal to their dam, although bulls coming of famous milkers were more frequently getters of good milch stock. Famous milkers are always to be found among the so-called "Natives," and if one wished to establish a fine dairy herd, his best plan has been, and still is, to select through the country these deep milkers wherever he can find them—and yet the maintenance of the herd from males of his own breeding has been always attended with disappointment, and its deterioration in good points.

The same result has been obtained in regard to breeding for beef, for it was not until the introduction of the improved British breeds, Devons, Short-horns, and Herefords, that uniform excellence of quality, rapid growth, and economy of feeding, could be predicated with anything like the certainty with which we now raise grade cattle for beef, notwithstanding the immediate progeny of certain animals occasionally resembled their sires or dams in early maturity, easy fattening, and excellence of the beef.

We present these facts in order to enforce the important fact that *no breeder can expect to improve his stock except by breeding exclusively from thorough-bred or full-blood males.* This is a broad, general principle, and equally applicable to all *polygonum* animals, that is, those which do not *pair*, from horses to barn-yard fowls.

A Summer Fowl-House and Yard.

A very large number of those who might be enthusiastic poultry keepers are deterred from keeping fowls, because the narrow accommodations in which fowls do very well in winter are too small for them in summer, and they cannot be allowed free range, or they would damage their owner's and the neighbors' gardens. To meet the wants of such, as well as of those fanciers who wish to keep several breeds separate, Mr. J. H. Mabbett, of Jersey City, has devised the following neat plan, which we think combines taste, cheapness, and efficiency. He writes: "I would suggest to those who may adopt the plan, that they buy young fowls of some of the many good breeds, and feed them well, giving them all the refuse pieces of bread, pastry, meat, etc., of the table, which will be eagerly eaten, and materially reduce the amount

manner: There are eight 2×3-inch rafters, 7 or 8 feet long, "tied" by cross strips connecting those opposite, the strips being nailed to the rafters above the middle. The roof extends four feet from the peak on all sides. The eight posts for the house are nailed to the rafters so that the eaves will extend a few inches beyond the sides, which may be of three-quarter inch pine boards, one of the sides being a door. The floor is an open work of laths, and is two or three feet above the ground. An alighting shelf runs around the whole house, and nest boxes are set inside, accessible by sliding doors from without, for removing the eggs. The ends of the rafters are connected by 2×3-inch plate pieces, nailed to the rafters and to the eight posts. These posts may be about 6 feet high, and are nailed upon sills, all of the same sized stuff. This external frame is covered or filled in with a lattice-work or plain slat-work of common building laths, substantially in the manner shown in the engraving. This whole structure, if made of the largest size contemplated, would be entirely portable, and might by slipping a couple of scantlings under the sills be pushed about upon rollers almost anywhere, upon nearly level ground, and so be shifted every few days to where the grass is fresh. A ventilator is provided in the top of the house, and a step ladder, if necessary, for the fowls to ascend two or three feet to the alighting shelf.

Clover West of the Mississippi.

Grass and grain grow so freely at the West that until recently the farmers have paid little attention to crops that would improve the soil, to rotation, or to other means of increasing its productiveness, using little draining, little manuring, and very little clover. The following letter from J. L. Erwin, of Callaway Co., Mo., will be read with interest, as it evinces progress in the right direction, and indicates profitable fields of labor for industrious men:

"Doubtless many of your readers, like myself, own small farms and would like to make them as valuable as they can. Nearly, if not all the model farms we read of are so large, and the capital necessary to run them successfully so great, that we despair of ever being able to make ours models. There is very little systematic farming done here—no rotation of crops, and but little clover grown. I came to this State in April 1866, brought with me a bushel and a half of the common Red



SUMMER FOWL-HOUSE AND YARD.

of grain required to keep them. If six or eight good hens are selected and well cared for, they will supply an ordinary family with all the eggs required for the season, and in the fall when they stop laying, will be in fine condition for the table." The plan presented contemplates the suspension of a small octagonal house, about four or five feet in diameter, in the following

clover seed, and about half a bushel of what we have always called the 'Large Red' or 'English' clover seed. We sowed one bushel of the former and three gallons of the latter, each with an equal quantity of Timothy seed, on oats, immediately after sowing. It all came up well, but in July and August the Timothy and a great deal of the common clover perished with

the drouth, and was not worth mowing last harvest. The large kind was injured somewhat also, but we cut four acres of it for seed last fall, and had sixteen bushels of good seed, worth \$10 per bushel. It stands the dry season apparently much better than the common clover. Clover and Timothy do better here, if the ground is thoroughly rolled immediately after sowing. Our subsoil is a stiff clay, holding water like a jug. I have been studying Draining for Profit, and am satisfied it would greatly benefit my farm to have it well drained, but the cost of tile is so great I cannot now make the trial. I do not know of a single tile factory west of the Mississippi. Limestone is plentiful; wood is worth \$2.50 to \$4 per cord delivered; coal is worth \$3 to \$4 per ton, yet lime is worth 35 cents per bushel at the kiln. Here is a good chance for a few lime burners. Many of our farmers would use it could they get it at a reasonable rate."

Cabbages as a Field Crop.

Farmers who keep cows for milk, and have tried cabbages, are pleased with the results. They furnish at a small cost a very large amount of fodder, at a time when the pastures fail. They are highly relished by cows, secure a large flow of milk, and if fed but once a day, immediately after the morning milking, they impart no unpleasant taste to the milk. Either old ground or a fresh soil may be taken, and it should be manured very liberally. We have succeeded well by planting cabbages as a succession crop between rows of early potatoes, setting the plants the last of June or first of July, and digging the potatoes from the 4th to the 20th of the latter month. In this case, superphosphate of lime, bone-dust, or some concentrated fertilizer should be applied as soon as the plants are fairly established. If no other crop is attempted, plow with a double Michigan plow, and manure thoroughly early in the season. Keep the weeds down with the harrow until June, and at any time, from June 1st to July 15th, set out the plants, three feet apart, and two feet in the row. Six or seven thousand plants can be raised to the acre. The transplanting and cultivating can all be done by boys, costing not more than one-half as much as the labor of men. If the cultivator be started soon enough after the transplanting, the hoe need not be used at all. A good deal depends upon getting the right varieties of cabbage and seed of the best quality. The Bergen Drumhead, Premium Flat Dutch, and Stone Mason are among the best varieties for field crops. Sow the seeds in well-worked, rich seed-beds three or four weeks before the plants are wanted.

Root Crops for Feeding.

We believe there is a steady increase in the cultivation of turnips, parsnips, beets, and carrots, for feeding cattle. Intelligent men who have tried the experiment fairly are not content to go back again to feeding with hay and grain exclusively. There is a great craving among cattle for something succulent and juicy in the winter, that is best met by these roots. The animals thrive better, and other food goes further, for this change in the diet. We have no doubt that the cultivation of roots as field crops would extend much more rapidly if farmers knew how easily they could be raised. With suitable implements nearly all the cultivation can

be done by horse power. The only occasion for the hand hoe is in the first weeding and in thinning out the plants to make a good stand. Old ground is better than a fresh-turned sod, as the soil needs to be finely pulverized. We have always had the best results from deep plowing and subsoiling. Fine compost or concentrated fertilizers should be used, one half plowed in and the other half sown broadcast and harrowed in. It is a help to soak beet, carrot, and parsnip seed for a day or two before sowing. Then mix them with superphosphate of lime, and sow with a drill. The young plants make their appearance before the weeds, and the rows are so strongly marked that they can be hoed out with very little labor. The cultivator should be started between the rows as soon as the plants are visible. Very much labor is saved, and larger crops are realized by timely and frequent cultivation. Stir the ground between the rows every ten days until the plants get possession. Parsnips should be put in early in the spring. Carrots sown June 8th make a good crop in the latitude of New York, and Rutabagas and White French turnips may be delayed until July 1st. It is easy to raise from 600 to 1000 bushels of roots to the acre at an expense of not more than 15 cents a bushel. Try an acre of roots.

Truss Beams over Wide Barn Floors.

In the February number, p. 52, we exhibited a plan for a truss bent for securing a wide barn floor. Mr. Wm. Ashley, of Bloomfield, N. J., sends us drawings of trussed beams stiffened by iron rods in a way to give them great strength. His directions are: "Take two sticks of timber of the length you want; on one of them nail



Fig. 1.—TRUSS BEAM, 20 FEET LONG.

strips three inches wide, and of the thickness of the rod to be used, as shown in fig. 1, and cut places in the strips for the rod to lie in. Get a rod of iron of suitable length and size, as explained below, and have a thread and nut on



Fig. 2.—TRUSS BEAM, 20 FEET LONG, IN SECTION.

each end; put it between the timbers, and bolt them together as shown in fig. 2, the bolts passing through the strips. Then cut off the corners of the timbers at right angles to the rod, and put on strong iron plates with holes in their

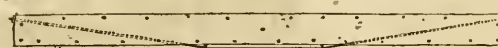


Fig. 3.—TRUSS BEAM, 30 FEET LONG.

centers for the rod to pass through. Take a piece of iron of the same size as the rod and as long as the thickness of the entire beam; place it under the center between the rod and the timbers, and screw up the nuts on the ends. Thus we have a perfect truss beam, which no

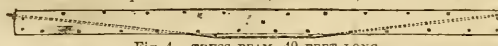


Fig. 4.—TRUSS BEAM, 40 FEET LONG.

ordinary weight will break, with all clear room above and below. Trussed beams over 20 feet long should have two bearings for the rod. The following dimensions may be stated. For a 14-foot span, use 1½-inch plank, 8 inches wide, with ¾-inch iron rod. For a 20-foot span, use 1½-inch plank, 10 inches wide, with ¾-inch iron rod, shown in figs. 1 and 2. For a 30-foot span, use 3-inch plank, 10 inches wide, with ¾-inch

iron rod, shown in fig. 3. For a 40-foot span, use 3-inch plank, 12 inches wide, with 1-inch iron rod, shown in fig. 4. The bolts which the rods draw over must be of equal thickness to the rods.

Field Beans.

There is said to be more nourishment in beans for the money usually paid for them, than in any other article in the market. For the laboring man they are always wholesome and palatable, good green and dry, good in soups and succotash, and indispensable baked in every Yankee family. The crop is popular in all parts of the country, but holds a secondary place, and, like buckwheat, is put off upon poor, neglected land, where no other crop will pay. We think it deserves good land and better treatment. There are three varieties of the field beans grown for our northern markets—Pea bean, Blue Pod, and White Marrow. The Blue Pod is also called Medium, from its size, and is the common "white bean" of New England and New York. The Pea bean is about half the size of the common white, and does not sell so well. The Marrow is about twice the size, is of much better quality, and sells higher. It requires the same treatment, and should always be planted, if the seed can be had. In a very wet season, or on very rich soil, the vine is more inclined to run, and the crop is not quite so sure. The White Kidney is a much better bean than the Marrow, and though commonly raised in the garden, is well adapted to field culture. It will not bear neglect so well, but with good treatment we have no doubt it would yield more bountifully, and pay better. It requires a little longer season, and is a good bearer. The

bean is long and about twice the size of the Marrow, and always sells higher. The soil best adapted to the bean is a good sandy or gravelly loam, in good heart. The application of fermenting manures is objectionable, as it makes the plant run too much to vines. For this reason it is better to plant beans upon old ground, well manured the previous year, than upon fresh sod. They follow corn or root crops very well. The old

mode of cultivation in New England used to be as a "stolen crop," between corn, planted at the second hoeing, or about the last half of June. The corn was planted in rows both ways, and at the second hoeing, the beans were planted in rows, one way, a hill of beans to each hill of corn. The beans were hoed with the corn at the

third and last hoeing, and the cost of cultivation was very small. This practice also had the advantage of convenient drying, as the beans were pulled soon after the stalks were cut in September, and placed in bunches upon the hills of corn to cure. Of course the beans were much shaded, the yield was small, and they made the corn crop smaller

that it would otherwise have been. A better practice is to give the beans a field by themselves, and let them have the full benefit of the soil and sunlight. After plowing as early in the season as the ground will allow, harrow thoroughly, every two weeks, to destroy weeds, until the first of June, when the seed may be put in. The crop will mature if planted any time before the first of July. We prefer planting in

drills two feet apart. Much labor will be saved by having a machine that makes a furrow, plants, and covers, at one operation. If they are planted in drills, the hills of the smaller varieties may be put eighteen inches apart in the rows, and the larger kinds, two feet apart. In smooth ground, all the cultivation may be done by horse power, and this should be attended to as often as once in ten days, until the pods are well grown, when the cultivation may cease. When the plants turn yellow, and before the pods open, pull the vines and put them between stakes to dry. Two stakes driven into the ground about six or eight inches apart will answer a good purpose. The excellence of the crop depends a good deal upon the perfectness of this curing process. If left upon the ground, they often mould, and become spotted. They should be left in the field until they will shell easily. They are then removed to the barn floor in a cloudy or damp day, to prevent shelling, and thrashed out, when it is convenient. Some thrash them in the field, but the barn floor is cleaner, and always gives shelter in case of rain. If thoroughly dry, the beans after winnowing may be put immediately into barrels or bins.

Renovating Old Meadows.

John Kelsey, of Yardleyville, Pa., who has an original and good way of doing many things, reports to the *Agriculturist* his method of renewing old mowing lots without plowing. "If the surface of the meadow is sufficiently smooth, that is, needing no moving of the surface, the most effectual way is to harrow it until the soil is entirely loose, using a Kelsey harrow (that is, one with a pole or shafts). This should be done immediately after mowing, as the hot sun will then kill all the grass roots. Let it be harrowed about once every ten days until about the 25th of August, then spread on 50 bushels of lime to the acre, and harrow it well. Sow the timothy seed about 4 quarts per acre, about the first of September, roll it down, and put up the bars or shut the gate, and if you do not get a crop of grass the following harvest then set me down for a humbug. Perhaps some may say that 'the grass roots will clog up to the harrow;' if so, rake them into windrows and set fire to them, and then scatter the ashes over the lawn. I dressed up an old meadow of ten acres in Bucks Co., Pa., and succeeded in raising 25 large two-horse loads of clean timothy hay the first crop, where in former years only two loads of trash had been raised, and that by a man whom tradition says was 'the best farmer in Bucks County.'"

Packing and Keeping Eggs.

In the months when eggs are abundant it is often desirable to pack away fresh eggs for use in a time of scarcity; and in the spring and early summer, when eggs are to be kept for hatching or packed for transportation for the same purpose, it is particularly important that they be well packed. To this end some knowledge of the structure of the egg is useful. Within the shell we find first two distinct lining membranes, which are separated at the large end by a small cell, or bubble of air. This is an arrangement whereby the egg is always full; for though the fluids of the egg contain water, and this evaporates through the shell, the air bubble enlarges just in proportion, and so there is never a cavity within the inner membrane. The white of the egg lies in contact with this lining tissue.

It is not simply the thick, glary substance which it appears at first sight, but it exists in spherical layers of different densities, and separated by exceedingly delicate tissues. This may be seen when an egg is broken and the white turned off, and when after long boiling the white is divided or broken so as to show the layers. Enclosed in the white, or albumen, is the yolk, which consists of albumen mingled intimately with oil, and this is in concentric layers. Upon one side of the yolk are two heavy whitish masses, which consist also of semi-membranous albumen, called chalazae, and opposite to them is the minute germ which is the center of vitality. The chalazae, being heavy, keep the germ always uppermost, and in position to receive most directly the warmth from the body of the hen. The yolk is the food provided for the chicken for a few days after it is hatched, the white being the material out of which the body of the chicken is formed. The white will dry away on exposure of the egg to the air, and no decay will take place if the air contain but little moisture, that is, if the drying be rapid enough. We have had eggs, which, after having been kept in a very dry place a few weeks, had apparently lost nearly half their weight, yet were not "stale," and transmitted the light of a lamp with almost the ruddy glow of fresh eggs. If, however, the air is moist and warm, the egg soon begins to decay. When eggs are kept for hatching, the loss of water, except to a very limited extent, would probably be fatal to the germ; hence they should be put in a cool place, and covered. It is well, also, to change the position of each egg occasionally. For transportation it is well to pack them points down, in bran, in a paper box, and to pack this in a wooden box surrounded on all sides with hay. The danger of jars rupturing the delicate membranes is thus greatly diminished. One may easily prevent an egg from hatching, by holding it in the hand and striking the fist smartly upon the knee. When eggs are to be kept for eating, if smeared completely with tallow, the air will be shut out, and they will keep a long time. A coating of resin dissolved in alcohol would be equally effective, and beeswax and sweet oil are used by the French for the same purpose. Hard-boiled eggs, say boiled twenty minutes, will keep good for months, and may be used for salads. Packed in jars filled with lime-water, eggs will remain sweet a long time, and several correspondents unite in advocating the use of salt with lime. Two ladies recommend the following: "One pint of salt, one pint of slaked lime, to one pint of water." The eggs are placed in the vessel containing this and kept covered with the water. The vessel should also be kept closely covered. "Mrs. M. J. B.," says she found them good at the end of a year. There are several patent processes for preserving eggs, the proprietors of which have sent us circulars with certificates of their practicability attached. As we know nothing of any of these processes beyond what is claimed by the patentees, we are not yet in a position to advise our readers to invest in these patents.

One More Acre of Potatoes.

Last year the crop was short in all parts of the country; in the West from excessive drought, and in the East from excessive rains. Potatoes have not been so high in twenty years, and the great prices have increased the expenses of living, among the laboring classes, for everybody feels that he cannot get along without this vege-

table in his family. Five dollars a barrel and upward has been the price, for a good article, in the New York market for the last four months, and they have been retailing at the grocers for sixty cents a peck. Farmers, who had potatoes to sell, have been in luck the past winter. This crop, at fifty cents a bushel, pays better than almost any farm crop. With very careless culture it is not difficult to get a hundred bushels to the acre, and with good cultivation twice that amount is often realized. If it be said, that the crop has extra risks, we admit it; but a man can afford to run some risk for the chances of the extra profit. But the risk is very much diminished by avoiding the causes that predispose the crop to rot. The new seedlings, as the Goodrich, Harrison, Cuzco and Sebec, with fair treatment, have very little rot. Abandon the old varieties, and plant these exclusively. Fresh fermenting manures induce rot. Therefore plant on sod, or on land well manured last year, and manure in the hill with plaster, or with ashes. Avoid heavy wetland and plant on light sandy or gravelly loams, or on land well underdrained. Plant in drills, thirty inches apart, and one foot apart in the drill, and do all the cultivation possible with horse power. Let us have, this year, potatoes enough for all.

The Willows and their Uses.

The most common use of the Osier Willow, (*Salix viminalis*) is the making of baskets. Though we have every facility, in soil and climate, for growing it in the greatest abundance, it is still imported in considerable quantities, both in the rough and in the manufactured state. Some progress has been made in this country in its cultivation, and machines have been invented for peeling the bark, which was a laborious process as done by hand, and was a serious obstacle to the cultivation of basket willow here, where labor is so high. But this plant and other varieties near akin are used for other purposes, and their cultivation ought to be greatly extended. In the making of rough fences, every farmer has occasion to use withes, and several common varieties of the willow would be found more supple and quite as durable as the birches, oaks, and hickories, commonly used. One of the best varieties for this purpose is the Varinised Willow (*Salix decipiens*). The Goat Willow (*S. caprea*) also makes good, stout withes. In the nursery, flower garden, and propagating grounds, also, the willows are very handy for a variety of purposes. They make good stakes for all the smaller plants and vines, that need tying up; they make trellis rods, also, of an extemporaneous character, and furnish the withes for fastenings. For tying the arms of vines or espalier trees, the Yellow Willow (*S. vitellina*) furnishes very neat little twigs. They are more convenient than strings, and may be always at hand. In the vineyard, the willows make the cheapest stakes for the earlier stages of the growth of the vine. A few square rods of ground cannot be put to a better use than growing willows for these purposes. There is scarcely any land that will not raise willows, but to raise the best rods for the basket-maker, as well as for other purposes requiring long and straight shoots, a fertile soil is required. One that is well drained and rich without being wet is better than a constantly moist soil. Of course, we now speak of where their culture is to be made an object of profit; where the Willow is to be planted only as a thing handy to have for withes,



"THE LAST SHOT."—FROM A PICTURE BY R. ANSDELL.—Drawn and Engraved for the American Agriculturist.

etc., the plants may be put in any convenient place, such as the bank of a brook or other unavailable land, and be left without other care than to cut them over, every year or two, or when the shoots get too large to be useful. This however, can hardly be called culture. In cultivation the land is well mellowed and the rows laid out at a convenient distance for working, for to get good rods there must be good culture. In England, where the work is done with a hoe, the rows are eighteen inches apart, but with us, where horse cultivation is almost universal, thirty inches would be better. The Willow grows perhaps more easily than any other plant from cuttings, and only the greatest neglect can cause a failure. Cuttings are made of last year's growth, a foot long, using only the strong wood and discarding the weak tips which would make weak plants. The cuttings are dibbled in at a foot apart in the rows, leaving a third of their length above ground; the soil is pressed firmly against the cutting with the foot, and the work of planting is done. The crop should be cultivated with as much care as one of corn, and there should be no cutting made the first year after planting. The second autumn the shoots are cut down to within a few buds of the base, and the third autumn should give a full crop.

"The Last Shot."

Our pacific pages are seldom startled by such a scene of blood and carnage as the one here presented, and we introduce it here not to draw any lesson of a practical character, but as a reminder of the hardships and dangers of frontier life—and the perils of the trappers among our northern and western wilds. The engraving is from a painting by an English artist, R. Ansdell, and represents the wolf of Europe—which, however, is so similar to our own that naturalists have until recently, generally regarded them as identical. Their habits are the same, they being the most treacherous, cowardly, sneaking thieves imaginable. The presence of wolves in frontier regions is seldom dangerous to the inhabitants, except to young children, and even these are rarely attacked if calves, sheep, or pigs are to be found. When emboldened by numbers, or pressed by hunger, and attacking in packs, they are formidable foes. Following the trains of travelers or hunting parties to feed upon the refuse of the camp, they often attack isolated animals, as disabled horses, or cattle, or even the solitary traveler. Scenes like the above occur only in the depths of the forest, or on the unfrequented

trails among the mountains. The dropping of a blanket saddle cloth, or something they will eat, occasionally shooting one of the pack, and similar expedients, are resorted to to direct their attention from pursuit, and a lasso trailed upon the ground is one of the best means of frightening them away. These attacks are directed against man only when the animals are driven by hunger to absolute desperation, but are then made with astonishing perseverance and the most savage ferocity. The bite of the wolf is a quick succession of gnashes, so that when once they pull an animal down, or have a fair chance at one, they soon disable him. We believe nothing of flesh and blood can withstand these bites—for when wolves are really hungry they will make short work of even dry rawhide ropes, and leathern wagon traces. The pack of wolves runs down the traveler's horse, and then frightened and exhausted he falls an easy prey, unless his rider makes a good fight. In the above picture the artist's grouping is effective, his management of light and shade is excellent, and the whole scene spirited, as if it were the portrayal of one in which the artist had been at sometime an actor. It will soon give place to a scene of "still life," if the "last shot" is as effective as the others.



A GROUP OF BELL-FLOWERS.—Drawn and Engraved for the American Agriculturist.

The Bell-flowers—Campanulas.

Among the herbaceous perennials the Bell-flowers are high in our esteem. They are hardy, easily propagated, and remain long in bloom; they give us considerable variety in habit of plant and form of flower, and every shade of blue, besides white, and other varieties. They are all beautiful, from the tiny native Harebell, to the Pyramidal Bell-flower, which grows to the height of four or five feet. Almost every one knows the old Canterbury Bells, (*Campanula medium*), a biennial formerly seen in our gardens more frequently than at present. This is the best known, and has the true bell-shaped flower which suggested the generic name—Campanula. Our artists have enlarged and reproduced from small sketches by Riocreux, the great French draughtsman of flowers, excellent representations of some of the less-known species. The one on the extreme left is the Large Bell-flower, *Campanula grandiflora*. It is so unlike other Bell-flowers that some botanists have separated it from them, and it has been called *Platycodon* and *Wahlenbergia*. The large, shallow flowers are borne on stems one foot or more high, and in the bud present a curious balloon shape. The color varies from the deepest blue to white. It not rarely happens, as in other species, that a second corolla appears within the other, making the flowers semi-double.

The next and smallest of the four is one of

our prime favorites—the Carpathian Bell-flower, (*C. Carpathica*). It is delicate in habit, and a profuse bloomer, beginning to produce its small flowers in June and keeping it up until stopped by hard frosts. Next this is the Bouquet Bell-flower (*C. glomerata*), so called from the manner in which it bears its flowers in clusters; it grows about two feet high, is rather stiff in its habit, but very ornamental in the grounds.

On the extreme right is the Tall Bell-flower, (*C. grandis*), a noble plant growing three feet high, and covered with large, bell-shaped flowers of a clear blue color. This is perhaps less common in gardens than either of the others.

The Peach-leaved Bell-flower (*C. persicifolia*) is not figured; it is, however, one of the most beautiful in a beautiful genus. Very many more might be mentioned, but we only wished to call attention to Bell-flowers in general, and refer to the seed catalogues for the list of all that may be cultivated. The perennial ones are easily multiplied by root-division in fall or spring, and they may be raised from seed by those who will wait a year for their bloom. In every garden of any extent it is well to have seed-beds especially for perennial plants, where the young seedlings can be grown in rows like cabbage or lettuce plants, when they will have care, and yet not interfere with the general effect of the garden. Thinning, weeding, watering, and covering in winter, can be better done when the plants are in such beds than when scattered about borders.

Currants and Their Enemies.

For some years we have endeavored to make the currant more popular, as we consider it a most healthful as well as easily raised fruit. That there are obstacles to its culture we are aware, and so there are to that of all fruits, and whoever is not willing to take proper care of his currants does not deserve to have them.

The most common insects injurious to the currant are the Borer and the Currant-worm. Both the American and the European Currant Borer trouble our plants, the one the larva of a beetle, and the other that of a moth, but as they are practically the same in their habits and effects, it is not necessary to speak of them separately. The larva lives upon the pith of the currant stem, and the insects come out from the dead stalks in their perfect state late in May or early in June. They lay their eggs upon the new shoots, and the young brood, when hatched, penetrate the stem and carry on their work of destruction. Where the bush is kept properly pruned no very extensive damage usually results from the Borers, as the infested limbs are discovered and removed at pruning; these should be burned, for if thrown upon the brush-heap the perfect insects will make their way out and provide for a continuance of the trouble.

The Currant-worm, which is the larva of an insect somewhat resembling the common fly, is the most destructive enemy of the currant.

The worms or slugs are small, keep upon the under side of the leaf, and the bush is often stripped of foliage before their presence is suspected. The worms, when they attain their growth, enter the ground, undergo their changes, and the flies appear to lay eggs for a new crop.

Powdered White Hellebore dusted over the bushes destroys the worms at once. A light dusting from a dredging-box is all that is needed.

A correspondent in the Country Gentleman suggests covering the ground around the bushes with coal ashes to the depth of five or six inches. The idea is that the coal ashes present a barrier to the exit of the fly from the ground in the spring. Concerning this, "Walks and Talks" writes: "Try the coal ashes, but at the same time watch the bushes, and as soon as you see the little, beadlike eggs on the under side of the lower leaves, crush them with the thumb and finger. The flies come out of the ground and deposit their eggs on the first leaves they come to. On neglected bushes there are generally a dozen or more suckers round the bush. The eggs will be found on these. Cut them all off, except one or two which may be needed to form new wood. In this way you will destroy hundreds of worms and benefit the bushes at the same time. Remove all the useless wood from the bush, and place it in the sun or burn it. You will have more and much finer fruit. This work should be done early in the spring."

The correspondent who complains that his fruit prematurely ripens and is worthless, will, if he carefully examines the berries, probably find within each a minute maggot. The only remedy we can suggest is to gather and destroy all such fruit before the insects have time to mature and prepare for a brood the next year.

Farm and Family Gardens.

The Native American race is one of meat-eaters, and our carnivorous propensities are quickly adopted by citizens whom we adopt. There is no reason why they should accept our vices with their naturalization, and there is every reason why we should engraft their virtues upon the Native American stock. Germans, French, Italians, and Swedes, are all famous for having good vegetable gardens. The majority of our best gardeners are English and Scotch, and sons of Erin set up for gardeners even before they have had time to shuffle off their Old Country brogans. If the good-wife knows how to use vegetables, she will accomplish a great saving of meats, both fresh and salt, and the meals will be much better relished, and more healthful. If she does not know, there is the more necessity for providing an abundance of all sorts of delicious vegetables to put her up to doing her part well. At all events, then, plant a garden—give it the best manure, well rotted, and plenty of it. Put it on three inches thick, and spade, fork, or plow it in. It will not make a big hole in the manure pile unless one sets out to raise vegetables enough for all the neighborhood, which might pay very well. It is not too late to begin gardening early in May, though April is the proper time to lay out, manure, and plow, to say the least. Those who begin now may with a very little more labor and the use of liquid manure have their tables supplied quite as early as many whose gardens were planted a month earlier. Carry good farm practice into the garden, and use good garden practice upon the farm. As a rule, short rows are a nuisance. A twelve or sixteen-foot board is frequently used in sowing the seed, and its length may sometimes determine the width of the beds

and length of the rows. The use of the board is twofold—as a guide to the rake stake in marking the drill in which the seed is to be sown, and as a walk while sowing and covering by hand. Of course, it is not used when a seed-drill is employed. The secret of good gardening is thorough tillage combined with clean culture and high manuring. This cannot be if the soil is wet, and it can hardly be the first year, if the soil is a very stiff clay, first brought under culture, but almost any other ground may sustain a fine garden if labor and manure be ungrudgingly applied at first. The amount of labor is really no tax, if the garden only gets the odd minutes which might otherwise be lost. The women of the family, from the wife to Bridget or Dinah, will rejoice in an occasional opportunity to gather up their dainty and do a little weeding. Bridget and Katharina will probably show unusual aptness at hoeing cabbages, cauliflowers, and Kale. Only take a little pride in starting the garden well, and the result will be favorable; for the excellence of its products, as soon as lettuce, early beets, green peas, and little sweet carrots, make their appearance on the table, will supply a motive to diligent continuance in well-doing. TheHints about Work in the Garden, on the third or fourth page of every number of the *Agriculturist*, are fresh every month, and constitute a safe guide for either the novice or the experienced gardener.

The Grape Vine—How it Grows and What to Do with it.—4th Article.

Though the proper season for pruning is past, we talk about the operation, as we wish to have this series of articles connected, and they will be useful for reference in autumn. If we have seemed to dwell too much upon a few elementary facts it is because of their importance. It has been attempted to explain clearly the parts of the vine, and to insist upon the point that all the fruit is borne by the green shoot that starts from the bud in the spring. If we leave upon a vine a dozen buds, we may have as many shoots, and if we cut all away but one bud, but one shoot will grow. No plant is more plastic, so to speak, than the vine, and the various ways in which it is trained are almost bewildering in their number. Yet, while it yields itself so readily to our will, there is nothing more obstinate and perplexing than an old and neglected vine. Whatever is to be done with the vine, it must be taken in hand when young, and have constant care, and an annual pruning. Last month we showed how to establish the vine by cutting it back each year, and growing a single shoot until a strong and vigorous one should be obtained. This might be continued indefinitely, but would give us very little fruit. The vine being well rooted and in vigorous growth, our object is to extend it, and the obvious way to do this is to allow more than one bud to grow. Let us take the simplest case for the next step, and suppose that this spring two buds have grown and formed two shoots. Next autumn the appearance of the vine will be that shown in figure 8—two canes, each like the single one grown the year before, and each, like that, furnished with buds. If it were desirable, the vine might be kept to two canes. To do this, the upper cane would, at pruning time, be cut entirely away, and the other cut back to two buds, which the next year would produce two more canes, and so on. To extend the vine a little more we cut each of the canes of fig. 8 back to two buds each. If neither of these four buds meet with

any accident during its summer's growth, the autumn appearance of the vine will be that shown in figure 9. The vine may be kept in this condition from year to year, and it is a very good system of pruning to follow where space is limited; it is often adopted for specimen vines where it is desirable to show a large number of varieties near one another, or for testing



Fig. 8.



Fig. 9.

new sorts. To keep the vine in this shape, the pruning is very simple; the upper two canes—the two that start the highest up on the stem—are cut away entirely, and the other two are cut back to two buds. The vine when pruned will appear as shown in figure 10, with four buds ready to furnish the four shoots for the next year. In practice it is customary to leave one more bud than is needed, and cut the canes to three buds. This is done for fear the upper bud may be winter-killed, as sometimes happens.



Fig. 10.

The superfluous third bud is removed in spring when all danger is over. A moment's thought will show how easy it is to extend the vine with four canes into one of eight. Instead of cutting away two of the four canes, as just described for the vine of figure 9, we cut all four back to two buds each. One who has read or seen something of vines will ask, "But where are your canes for wood and canes for fruit?" That belongs to another "system," and we have not reached that yet; we prefer to follow out the present one, and then take up another. It is to be understood that in the manner of treating vines as here described, the shoots will all produce laterals, and these must be pinched in the

manner shown last month. Shoots will, perhaps, start from the stem, for the vine produces adventitious buds, as they are called, i. e., buds out of the regular place. Shoots from these are sometimes useful to take the place of the regular ones that have been injured; but if all has gone well, these shoots are useless, and are to be rubbed off whenever they appear.

Ripe Grapes for Wine Making.

EXPERIMENTS AT KELLEY'S ISLAND.

On the grape islands of Lake Erie, the absence of autumn frosts allows the grapes to be left on the vines without injury until the latter part of November, and it has been a question of some interest among grape growers and wine makers, how much, if anything, is gained in the value of Catawba grapes for wine making, by allowing them to remain on the vines from two to four weeks later than the best time for picking the fruits for market—for it is found that Catawbas, like others, are of better quality and more sprightly in flavor, before "dead ripe."

To decide this question, the Kelley's Island Wine Company have made a series of careful experiments the past two years, the results of which are very interesting and conclusive. They are stated by Mr. Geo. C. Huntington, in an essay on the climatology of the region, read before the Lake Shore Grape Growers' Association, at its annual meeting in Cleveland, Ohio, a few weeks ago, which, in substance, is as follows:

On the 23d of Oct., 1866, the Company commenced buying grapes, and continued to buy daily until the 13th of Nov. The aggregate amount taken in was 103 tons, comprising 235 different lots, each one of which was sampled by pressing the juice from a part of the lot, and testing the gravity of the must by Oeschle's scale. The result showed a gradual gain in the weight of the must, until the close of the season. The time covered by this experiment, however, was short—the vintage commencing later and closing earlier than usual—so that the results obtained were not as marked as in ordinary seasons covering double the length of time.

The past season, (1867,) the experiments were renewed under better circumstances, the vintage commencing on the 15th Oct., and continuing until the 29th Nov.—just six weeks; during which time the Company bought 350 tons of grapes, comprising 691 different lots, every one of which was sampled and tested separately in the same manner as in the preceding year, with the following results by the must scale: Average of the whole 691 lots, \$3.35 dec. Average of 103 lots from 15th October to 19th of Nov., entire receipts of 1st five days, \$3.06 dec. Or 3.29 degrees below the average of the whole. Average of 81 lots taken after Nov. 15, \$3.13 dec. or 4.78 deg. above the average of the whole; thus showing an improvement in the quality of the must, of 8.07 deg., as compared with that pressed before the 20th of October—or a fraction over 10 per cent. To compensate for the loss in gross weight, which must occur from leaving the grapes so long on the vines, the price paid by the company was graduated according to the gravity of the must—those picked after the 20th of October bringing an average of ten per cent more than those gathered previously: which was considered as more than equivalent to the loss in weight. M. B. B.

TARRAGON.—This, the *Estragon* of the French, belongs to the same genus as the Wormwood; its botanical name is *Artemisia Dracunculus*.

It is a perennial herbaceous plant, and having a more slender growth than Wormwood, and bright green leaves, the resemblance to it is not very manifest until it comes into flower. The foliage is very aromatic with a peculiar fragrance when bruised, somewhat like Anise. It is used as a seasoning, it being highly esteemed by many in salads and in pickles. The tender shoots and leaves are used in the green state, and it is put into the vinegar to make Tarragon Vinegar. The plant is hardy and will grow in almost any soil. The seeds are very scarce, but we presume plants may be had from the nurseries. It grows readily from divisions of the root.



Treatment of Crocheted Trees.

Young trees are sometimes so badly grown that a fork or crotch is formed, and they are, when old and laden with fruit, in danger of being injured by splitting. Last year we gave a method of treating such trees, which was to cut off one branch and straighten up the other. This of course could only be applied to very young trees. Mr. W. H. Barnes, of Iroquois Co., Ill., writes us, that he has come into the possession of an orchard, in which the trees forked very low, and that all danger from splitting had been obviated by the twisting together of opposite branches—of course when quite young—as shown in the engraving. We give this, not as a practice to be generally commended, but as an expedient that may be adopted with a badly trained tree that has become too large to be brought into proper shape. The same end may be obtained, as our correspondent suggests, by inarching branches to act as stays. It is a very easy matter, and altogether best, to properly train the young tree from the start with a well balanced head without a crotch, which is both unsightly and dangerous.

About Annuals.

Among those engaged in gardening, some consider annuals as a nuisance, while others would not willingly do without them. The number of "novelties" that appear every year with highly colored descriptions have so disappointed the purchasers that we do not wonder that they are tired of annuals. Yet with all this there is each year one or two added to the list of those that retain a hold on popular favor. Our advice to the novice, and those of limited means, always has been to let those better able try the "novelties" and stick to the old friends that have proved their worth. To the real lover of plants, there is a charm about planting the seeds, watching the first appearance of the plant, and caring for its future progress, that make annuals very attractive. In sowing annuals, do not sow too early nor too deeply. Wait until the ground is dry and warm,

and then sow thinly and cover lightly. The seeds of most are very small, and the young plant cannot force its way through a long distance of heavy earth. We have on several occasions given lists of those annuals we consider most desirable; at the present time we will mention a few, suited to certain purposes.

Certain kinds appear well only as specimen plants, grown singly, with ample room to develop, while others are most useful when planted in masses. For beds in lawns, where the plants are grown closely, nothing gives a finer show than Drummond's Phlox, which we now have in a great variety of shades. Then, what is gayer than a mass of Portulacae? And if one likes yellow, *Tugetes signata purpurea* is as beautiful as a yellow flower can be. This is good in the mass, or fine as single specimens; the yellow of the flowers is so modified by the great abundance of finely cut foliage, that the effect is not glaring. One of the best of late introductions is the Double Zinnia, which may be used with good effect in masses or as single plants. The *Nemophilas* are all beautiful, and look fine in a bed, but the trouble with them is, they do not last long. The Dwarf *Convolvulus* is a favorite with us; the blue is superb, and it is a great bloomer. This list of plants for masses might be much extended, but we wish room to enumerate the principal fragrant annuals. Among those prized for their fragrance, none is more valued than the homely *Mignonette*. There should always be a plenty of this, and of Sweet Peas and Candytuft; with these three and a little green, a pleasing bouquet can be made at any time. Sweet Alyssum, *Erysimum*, and all the Stocks, are fragrant, as are some of the Pinks. For ornamental foliage, we have among annuals, Perilla, Cannas, *Amarantus tricolor* and sanguineus, and the really elegant *Ricinus*, or Castor-Oil plant. The common kind is very showy, but some of the newer varieties, as the *R. sanguineus* are, when well grown, splendid.

What Evergreens Shall We Plant?

To the novice there is nothing more fascinating than a catalogue. Whether he is to plant fruit or ornamental trees, he looks the list over and over, and is not so much in doubt as to what to take as to what he shall leave out. He usually orders a lot of unsuitable stuff; of course a majority of the trees fail, and he at once sets the nurseryman down as a lumbung. If all the beautiful evergreens were suited to all soils and climates we could make a list of most charming trees, but knowing the uncertainty that attends the most beautiful of this family, we are obliged to leave out the "novelties" altogether in making a selection for the general public, and fall back upon the old and well-proven sorts. Mr. Hoopes, in his recently published Book of Evergreens, gives the following good advice to novices, who had better leave *Cryptomerias*, *Cunninghamias*, *Deodar Cedars*, and such rare and tender plants, to those of more experience:

"To this class of planters we say, your first duty is to select such reliable kinds as the Norway Spruce, Hemlock Spruce, American Arbor Vitae, Austrian Pine, White Pine, Scotch Pine, etc., adding, as inclination tends, a few other really hardy and desirable well-known species."

His list contains all that we should advise those inexperienced in tree planting to try, except the Red Cedar, for the West. Far inland this tree grows with a luxuriance and grace that is a wonder to those who are familiar with the slow growing and rather formal tree of the East.

Weeding and Thinning.

An excess of seed—at least of all the smaller kinds—is usually planted. Aside from the difficulty of sowing just the quantity needed to furnish the required plants, there are good reasons for the practice. With plants that are feeble at their first start, like carrots, a quantity of seed is needed to break through the weight of soil and insure a fair stand. When the plants are fairly up, then comes thinning, or, as the English call it, singling. How much soil each particular plant requires we do not know with precision, but doubtless most of our roots are allowed to stand too thick. The larger the leaves of the plant the farther apart the roots should be. Onions, with slender leaves, may be crowded, while beets do better grown far apart. It must be recollected that the development of the root depends entirely upon the amount of healthy, active leaf surface. But our intention was to impress the importance of attending to this matter of weeding and thinning early. Whatever tool or machine may be found useful for cleaning between the rows, there is a certain amount of work that must be done in the row itself. For this no machine has yet superseded the hand. The work must be done as soon as the plants have made a few "rough leaves," i. e., those beyond the seed leaves. There have been weeding hooks and weeding chairs, and other contrivances to facilitate the operation, but the best way is to go down on the knees astride the row, and work with both hands, thinning, and removing every weed, no matter how small. The operation of hand weeding may be facilitated by the proper use of the hoe; in working between the rows, the plants in the rows, weeds and all, are cut out at intervals, so as to leave little clumps or hills at proper distances. The amount of hand weeding is thus reduced, as the work is confined to these little hills. Do it early, for weeds grow as fast as the crops, and in a cold rain seem to grow much faster and get ahead of the crops and choke them. As soon as the plants are large enough to handle, go at them; delays are dangerous. Onions and carrots especially, need the earliest attention.

A CURIOUS HERBACEOUS PLANT—TRICYRTIS.—Last summer Mr. Eugene A. Bauman, the well-known Landscape Gardener and Florist of Rahway, N. J., sent us a specimen of a plant under the name of *Tricyrtis pilosa*; we had seen the same thing in Mr. Peter Henderson's collection, called *T. grandiflora*. It was such a weird, peculiar looking flower that we had the engraving made which is here presented. The plant grows some two feet high, with hairy, light-green, strongly ribbed leaves, from the axils of which appear these singular looking flowers, which are white, copiously spotted with purple. While we cannot commend the plant as "beautiful" in the popular

sense, yet it is striking and curious in its appearance, and deserves a place in a collection of rare herbaceous plants. The genus *Tricyrtis* is a small one, and from Japan and Nepal. Botanically it would be placed in one section of the Lily Family, near our native *Uvularia*.



TRICYRTIS PILOSA.

A Variety of the Sweet Gum Tree.

The Liquidambar, Bilsted, or Sweet Gum, (*Liquidambar styraciflua*), is one of the finest among our native deciduous trees, and we have often called attention to its merits as a valuable



A VARIETY OF THE SWEET GUM TREE.

but much neglected tree for ornamental purposes. Last autumn we saw in the grounds of Mr. Joseph Longworth, near Cincinnati, a variety of this tree, of a very marked character. The specimen was, we believe, found growing wild by Mr. L., who introduced it to his grounds,

where it is in company with a remarkably fine collection of trees. The leaves in this specimen, instead of being of the five-pointed star shape, proper to the species, have only three prominent points, with one or two smaller ones, and are of the shape given in the engraving. The leaf-stalks, or petioles, are very long and slender, which gives to the foliage a peculiarly graceful and airy appearance. We could not learn whether the tree had yet borne fruit, but it would be very interesting to ascertain if this peculiarity will perpetuate itself, or the seedlings return to the original form. We hope that Mr. Longworth will see that so remarkable a variety as this is propagated and distributed, and would suggest *Longworthii* as a suitable name for it.

How to Transplant Evergreens.

All things considered, May is the best month for transplanting the majority of evergreens. While we have seen a screen of Norway Spruces successfully set in August, it was under such favorable circumstances as are not likely to occur to many, and we should not, from this one instance, advise summer planting. Just when the buds are swelling is the time when the tree seems most readily to recover from the shock of transplanting. Evergreens, as a general thing, do not seem to have the recuperative power of deciduous trees; they do not go into so complete a rest, and do not apparently awake with such renewed vigor. A well drained, not over rich soil suits the majority of these trees the best; let the soil be light, and use no manure. If the spot is very poor, make an excavation and get some good pasture soil to supply the place of that removed. The nurseryman must do his part of the work well, or no care on the part of the planter will save the trees. The roots must be kept from drying, either by a proper supply of damp moss, a puddling of clay, or both. Some of the dealers in young trees are

very successful in packing, by making the roots into a ball with clay; this is, of course, to be soaked off before the trees are planted. Do not insist on large trees, especially if they are to come from a considerable distance. In planting, spread the roots well, and carefully cover with fresh soil. Do not plant too deeply, but allow for the settling of the newly moved earth, so that the tree shall stand no lower than it did in the nursery. Large stones over the roots are better than stakes, but stake if need be. During the summer do not let the weeds grow around the tree nor allow the grass to encroach upon it; keep a clear, open, well-cultivated space all around the tree. Much disappointment often results from buying native evergreen trees. These, especially Arbor Vites, sometimes succeed as well as nursery trees, but with Hemlocks and the more delicate ones, it is different. These should be put on trial one year, planting in a naturally or artificially shaded place.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Moths, Moths, Moths.

"How shall I preserve my furs?" "How shall I keep my woollens?" "What must I do with our nice stuffed sleigh back?" is the sum and substance of a considerable pile of letters from good housekeepers, who are anticipating trouble from that little household pest, the moth. Much of the trouble with moths arises from not knowing their ways, and the best thing we can do is to show up the enemy. In these pleasant spring days a little insect will often be seen flitting about the room, an innocuous looking thing, of an unobtrusive drab color, which, if it attracts our attention at all, does so only pleasantly, as it seems full of new life, and in-

done. Where moths are once in a fabric, an exposure to a heat of 150° will destroy them. We once had some valuable traveling blankets that became infested; these we placed in a tight box and sprinkled freely with benzine, which did for the moths. Woolen sleigh coverings should be brushed over with a solution of corrosive sublimate, so weak that when it dries it will not leave a white stain upon the cloth.

The Big Pickerel and How it was Cooked.

The facts stated in the February *Agriculturist* in connection with the pictures of the pickerel, induced the friendly editor of the Jamestown (N. Y.) Journal to send us some statements in regard to the great size of the pickerel caught in Chautauqua Lake, and to verify them by a magnificent sample of the fish themselves. The fish sent exceeded the maximum length mentioned, being a

little less than three and one half feet. Its head measured 10 inches, its girth was 27 inches, and its weight 16 pounds. Mr. Bishop writes: "I might have sent one a quarter larger, but feared the flesh would not be so good. I saw one the other day that measured four feet, two inches, and weighed 32½ lbs. Two have been brought in that weighed 40 lbs. each, and measured 4 feet and 5 or 6 inches. Our Chautauqua Lake is fed by cold springs entirely, and the fish are much firmer and purer in taste than those taken in the streams around here. We stuff and bake large ones like Thanksgiving turkeys at our house. Small ones are nice fried in cream, if you have cream."

The fish came in excellent condition, and was weighed, measured, and divided. The head and shoulders were baked as follows: Cleaned, wiped out and off, sprinkled well inside with thyme, salt, and pepper, (not stuffed), spread out a little, and pressed flat, in a bake pan, the sides being tucked under; the whole was then completely covered with very thin slices of the best salt pork; a little water was put in the pan, which was placed in the stove oven. At the end of an hour and a half, it having been well basted, perhaps once in ten minutes, with the water in the pan, which was occasionally replenished with a very little more water at a time, the fish was ready for the table—brown and crispy on the surface, flakey and white within; solid and firm, yet tender and delicate as fresh fallen snow—but smoking hot. It was garnished with slices of lemon, and should have had a few parsley leaves, but the season has been unpropitious and our fine parsley is no longer thriving. The gravy, which was poured over it and surrounded it in the dish, was thymely and rich. The Fluke potatoes, simply boiled in their jackets, were the only accompaniment, and all sufficient. The roast joint which followed was neglected,—we were more than satisfied,—not too full for utterance, for the praises of the pickerel were the satisfactory theme of conversation then, and of agreeable memories now. And the Chautauqua pickerel were "marked up" far above common ones, and close along side of our very best table fish.—Other portions of the "big fish" were taken home by other editors, broiled and fried, etc., and a "good report" came back from each—with thanks to friends C. E. Bishop and Prof. Love for the superb present. We should all enjoy "casting a line" in Chautauqua Lake. The theory that fish furnish good brain nourishment, may account for the excellent quality of the Journal.

Keeping a Boarding House.

We have all laughed at the story of a man in New York who got rich and lived in an elegant house on Fifth avenue. An old friend from the country went to see him, and was shown over the house when several colored servants were eating their dinner. Being asked on his return how their old acquaintance was getting along, and what he was doing, he replied: "He seems to be doing well. He is keeping a negro boarding house." Are there not farmers who keep a boarding house? Ask the women. It is almost impossible to get girls in the country, and many well-to-do farmers who would gladly see their wives and daughters engaged occasionally at something other than cooking, are at a loss how to accomplish it. We can tell them. Do not board any men in the house. Put up houses for all the regular men you want, and make arrangements with them to board an extra man occasionally, as you may need him. There is no trouble about this, and it is a good deal cheaper than boarding men in the house. But in hiring the extra hands do not agree to board them in the other houses. Let them make their own bargains. Say, "I will give you \$30 a month, but I cannot board you. You can get board, however, with such or such a man." The object of this is to cut off all complaints in regard to the board. Pay good wages and try to make all the men, and especially their wives, comfortable, and you will have no trouble.

The money invested in a comfortable tenant house will pay a higher rate of interest than U. S. stocks. We know a man who pays a dollar a week for a house that did not cost \$300, and besides this agrees to work for the owner whenever he wants him. Such a system, however, is not a good one. You do not want rented houses for the farm. The cow, the pig and the chickens often cause trouble. Get good, married men, and furnish them a home, but not too many perquisites. Pay them good wages and make it an object to stay with you.

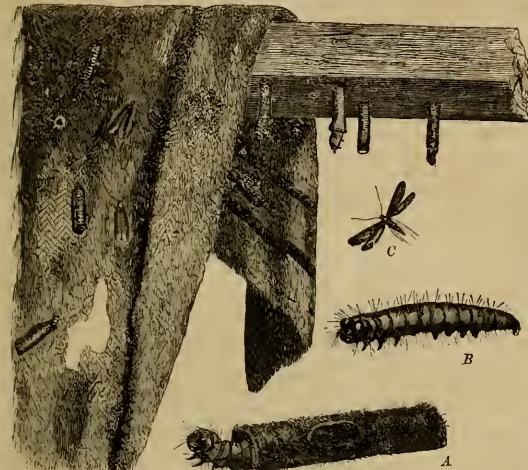
Home-made Photograph Frames.

"Adelaide," of Erie County, N. Y., sends us a very pretty frame, enclosing a Photograph, which is made by winding colored thread upon a piece of very thick pasteboard in the manner shown in the engraving. The star is 8 inches across from point to point. Rich brown thread, or other colors, the coarser the better, is selected, and ten rows of threads wound around two notches opposite to



Fig. 1.—THREAD PHOTOGRAPH FRAME.

each other, say from 1 to 4; then ten threads from 2 to 5; then ten from 3 to 6; and so on round and round until the whole pasteboard is covered. A pin thrust into each outer point, holds the threads from slipping off, and they are held securely in the inner angles by sewing a few times through the board, with a needle. The whole is simple, easily made, costs but a trifle for the thread, and is quite pretty. The open space in the center is an octagon just large enough for an ordinary photograph or carte de visite. They may be smaller. Frederick D. Parker, of Birmingham, Ohio, sends



A & B, LARVA IN AND OUT OF CASE, ENLARGED. C, PERFECT MOTH, NAT. SIZE.

sent only on its own pleasure. To use a vulgarism, "that's what's the matter;" this little miller or moth is great in its possibilities of future troubles. He, or she, (for the inexperienced eye cannot tell the difference,) should be killed at sight. Its first appearance should be taken as a warning of danger. The moths that trouble furs, woolen clothing, carpets, stuffed sleigh backs and furniture, may practically be considered as the same thing, for though the entomologist may find differences in them, their ways are alike. These winged moths deposit eggs on or in the furs or fabrics. These eggs hatch in about fifteen days, and the wool or fur serves the resulting worm, not only for food, but for clothing, for the grub makes itself a case out of the small fragments, and thus conceals itself while it works. It often happens that the presence of moths is not suspected until the mischief is done. After the grubs have made their growth, enlarging their cases to suit their needs, they go into the dormant state, and in spring appear as the modest winged insects to which we have referred. An engraving from a recent French work on the *Metamorphoses of Insects*, by Blanchard, gives the different stages of their existence. With moths, as with many other domestic troubles, prevention is the best "remedy." Camphor wood and cedar trunks are good, as the mother insect does not like their odor, and will not enter them. Cedar shavings, tobacco stems, camphor, pepper, and other aromatics, have the reputation of being preservatives, but there is nothing better than paste. See that the furs or woollens are well beaten, and put them away in a box or chest that has every crack closed by a strip of stiff paper well pasted on. Furs put up in perfectly tight paper bags, and pasted securely, will be preserved from the attacks of moths, but the paper must be without holes, and the pasting must be honestly

us a pretty frame constructed wholly of wheat or rye straw, cut and joined in the manner shown in fig. 2. The straws should of course be large and firm. They are easily shaped with a sharp knife, and then fastened with glue, or strong gum arabic, or other adhesive material. By applying black or other color to portions of the straw a very neat variegated frame is produced. The one sent to us is 6 inches high, and 4 inches wide, on the outside, but they may be of smaller size if desired.



Fig. 2. STRAW FRAME.

Household Talks.

BY AUNT HATTIE.

This morning was so bright and pleasant that I set Mary to clean the windows—and she has been at it all day, except for an hour at noon, when she prepared a simple dinner, and then cleared away again. Nothing adds so much to the cheerful and healthful aspect of a house as clear, bright window panes. We have had so much cold and freezing weather this winter that it has been impossible to keep them looking as nicely as we could wish. My neighbor, Mrs. B., says that she cannot understand how it is that we manage to find girls that are willing to do extra work, as she calls it. The trouble with her is this: when she finds that her house or windows need cleaning, she asks the girl in a half-frightened, hesitating tone, if she feels like doing it, and wishes she would clean this window or that for they are very dirty. Of course Bridget thinks that as the mistress appears to care so little about it, it is quite unnecessary for her to take much pains, and consequently the work is but half done, if done at all. Now, when I have made up my mind that certain work needs to be done, I accept the first convenient and pleasant day, and say to the girl in a firm, decided, but agreeable tone of voice, “Mary, I wish you to clean such and such a room to-day, or such and such windows; I want them thoroughly washed with clean, warm water and soap. I hope you will be very particular with the corners of the sashes, &c.” I then provide for her some good cleaning and drying cloths from a bag kept for this purpose. While the work is going forward, I occasionally inspect it, making such suggestions as may be necessary, thus teaching the girl something, and at the same time showing her that I take particular interest in the work itself. I have taken down the parlor lace curtains, intending to wash them and do them up again. I always attend to this matter myself, as they are quite handsome and I do not like to risk having them torn. The judgment of help is not to be relied on in such things, and the meshes of the lace may be easily torn through a little hard rubbing or too careless wringing. We have always been in the habit of soaking the curtains for two or three days previous to washing—changing the water (which should be warm) every day. It is astonishing how much of the dirt and yellow will be removed in this way, making it almost unnecessary to rub them much at the final washing. After coming from the boiling and bluing, they will be beautifully clean and white. I find a wringer indispensable for curtains, as it preserves the lace from breaking, and makes the starching process so much easier, and smoother in result. Many persons who have lace curtains for the first time are quite at a loss as to the proper way of getting them up when they become dirty, and many are the ludicrous attempts to iron them in the same way we iron those made of muslin. Of course the lace stretches entirely out of shape, and the work is abandoned in disgust. The proper way to finish them after starching is this: Prepare a large spare room by removing all the furniture, and sweeping and dusting the carpet very carefully. Spread the curtains one by one smoothly and evenly over the floor, and when all are done, lock the door and let them remain for a

day or two, or until dry. They will then be ready to hang again in the parlors. Some persons pin them to the carpet, but I prefer to merely spread them. If there is danger of the floor or carpet soiling them, clean sheets may be laid down first, but I have never myself found this precaution necessary. Edward and I took dinner with Mrs. S., yesterday. She is considered one of the best housekeepers in the town. Her house is delightful, and everything is kept scrupulously neat and clean, but I was much astonished at the singular manner in which the roast chickens were brought to the table. They actually stood on all fours. You laugh and say a chicken has but two legs, but these hapless creatures were allowed to use their wings for forelegs, and actually rested themselves in this fashion. The necks, instead of being neatly pushed under the skin and tied, were allowed to protrude frightfully. Their appearance was ludicrous in the extreme. Of course it was necessary to turn them on their backs before the carver could cut them up. I have seldom found a new girl competent to dress poultry or game properly for the table, but after showing her once or twice she is able to do so under my superintendence. I say under my superintendence, because I make it a point to see all the poultry prepared before my own eyes. There are so many little details of cleanliness to be observed that I prefer to do so, that we may eat with a better relish. The gizzard, heart, and liver, of a chicken intended to be roasted, should be removed carefully, cleaned, and set aside until the fowl has been singed and washed. With a sharp knife make a small incision in the flesh of each wing. Place the gizzard in one and the liver and heart in the other, bring them forward to the side of the breast, and pass the extremity of the wing backward in such a way as to turn the wing. Place one hand firmly on the breast, and with the other push the legs upwards towards the breast and under the wings, secure all together with skewers and a little string, sew up the lower incision, also the skin around the neck.—Turkeys may be thus dressed, omitting the gizzard and liver, which would be too tough roasted and should be reserved to make gravy.

Larger Yards About the House.

The housekeeper's department honestly extends a little outside of the house, where she plies her industries. This is conceded in many parts of the country, and she reigns quite as vigorously in the kitchen garden, the flower border, and the front yard, as in the kitchen and parlor. Every shrub and vine about the house she has planted, and every available spot between the front door and the gate bears the mark of her taste. Alas, that where land is so cheap, and flowers and ornamental shrubs so plenty, there should so often be no room to plant them! The great majority of farm-houses, even in the older parts of the country, stand directly upon the highway, and there is no protection for anything that might be planted. In many cases the yard allowed is not half the size of the house, even where it would not encroach upon the street. The first step toward improvement about these desolate homes is a larger space inclosed for ornamental purposes. The lord of the mansion often cares nothing about it, but the wife and mother does, and for the sake of her rising family she ought to have it. She is fairly entitled to a cheerful outlook from her window, a spot sacred to grass and flowers, where pigs and poultry do not intrude. The inclosure need not be expensive. Any thing that will turn cattle and allow the prospect of protection to the trees and shrubs that may be planted will do to begin with. Much display in fencing is not in keeping with the usual surroundings of a farm-house. We want to see trees, shrubs, and vines, much more than in the town. Once secure the place for planting and the planting will be likely to follow. We hope to see a general movement on the part of our housekeepers this spring for the enlargement of the yards about their houses, for the reason that if they do not move in it, it is not likely to be done—at least not very thoroughly.

How to Put Out Clothes on Fire.

When clothes take fire from the upsetting of a lamp, or other accident, severe burns are made, or life is lost, for want of proper action. The first impulse of the burning person is to cry out in the fright, and to run to the open door, which only fans the flame; and the bystander generally tries to put out the flame with his bare hands. A little presence of mind will save great injury and suffering in such cases. If the blaze is but just started, it may be subdued by falling instantly upon the floor and thrusting the burning part of the dress under the person. One standing by at such a time should seize a woolen blanket, shawl or cloak, or any woolen fabric at hand, and spreading it out higher than the head, run boldly to the unfortunate person, throw his arms about the neck and envelop him or her in its folds as tightly as possible. This instantly smothers the fire and saves the face. Throw the person upon the floor immediately, and the moment of greatest danger has past.

If the burn is severe, a physician should be called at once, but in the mean time something may be done to relieve the pain. One of the most soothing applications is a liniment made of one part of raw linseed oil and two of lime-water, applied on cotton. In the absence of these materials cover the parts freely with flour and put over a coating of cotton to exclude the air. Putting the burned portion in cold water affords a momentary relief, but interferes with the future recovery from the injury.

Dressing for Salads.

Most people relish a nice salad at this season of the year, and it would be still more prized if the needed dressing were at hand. The essential ingredients are: good cider vinegar, pure mustard, fresh eggs, and sweet oil made of olives—not of lard. Begin with a teaspoonful of dry mustard in a soup plate; add nearly an equal quantity of salt, a little vinegar, and beat to a paste; then add the yolk of a fresh egg, and after thoroughly rubbing and mingling all with a silver fork or spoon, add about half a tablespoonful of sweet oil, and stir until it is smooth. It will probably then have a shining, greasy look; add a few drops of vinegar, and it will, when stirred, at once thicken up, and lose the greasy look entirely. When all is smooth and uniform, add more oil, and again, a very little vinegar, if necessary, to produce the same effect. Our rule is to add as much oil as we can cause to be entirely taken up, and to stop before either the addition of more oil or vinegar will cease to thicken. The dressing should be smooth as whipped cream, and this, indeed, thoroughly beaten up with the white of the egg or eggs, is an addition to the dressing which increases its delicacy and deliciousness. In a good salad dressing the oil loses its oiliness, but pervades the whole with its flavor, and while the sharpness of the mustard, salt, and vinegar, entirely disappear, each ingredient adds a peculiar piquancy to the agreeable compound, which by contrast only heightens the crispy freshness of the lettuce, and brings out its flavor. The egg may be omitted, and you will still have a nice dressing, if the oil is good. Lettuce, water cress, endive, and celery, make fine salads. Dandelion, sorrel, and some other plants, are occasionally used. Salads are very appetizing, and may well have a place every day upon the table. Sweet dressings and cooked salads are not to our taste; many, however, like them.

Recipe for Salad Dressing by Mrs. A. M. Herr.—After every possible precaution has been taken by careful picking and thorough washing, to have the leaves free from sand or soot, I prepare a dressing by adding to a pint of water and vinegar, a tablespoonful of sour cream, a tablespoonful of sugar, a pinch of salt, and a well beaten egg. Then when this mixture is boiling, I pour it over the lettuce leaves, they having been well drained, and cover in a close fitting tureen, for two or three minutes. If the lettuce is not very tender the dressing may be poured off, and again boiled and applied. This quantity is for six persons.

BOYS & GIRLS' COLUMNS.

The Restless Blue-bottle Fly!

Whiz! Buzz! Buzz! A great blue-bottle fly came dashing into the open window, and blundering about the room where little Frank was sitting and peeping because he did not know what to do with himself. One would think he could have found play enough with all the toys scattered around him, or pleasure enough in the bright picture books that lay on the table, or work enough with his little spade, hoe, and wheelbarrow, which stood under the window outside, near the garden, to have covered his face with smiles and filled his heart and his eyes with sunshine. But there he was with a cloudy frown on his face, and a rainstorm of tears threatening to gather in his eyes, when the big blue-bottle made him forget himself by its loud hum and its queer freaks. Away it darted, and banged its head against the window pane—its brains would have been dashed out, if it had any; it circled round and round the room, then went flumbuging into every corner, as though hunting for something it could not find; next it came pounce upon Frank's nose, making him start and strike at it, but it was already away and beating its wings violently to brush off a cobweb in which it had entangled itself; luckily it was an old net, which the spider who made it had left, or that would have been the end of poor blue-bottle. "What an uneasy fly you are," said Frank, "why can't you be quiet? Wasn't there enough to look at out doors, that you must come poking in here? Now you *have* done it, you silly thing!" he continued, as the fly, after breaking loose from the cobweb, and buzzing about a little, darted straight into a cup of dissolved gum with which Frank had been mending his kite. It struggled to the edge, with its wings fastened down, its body besmeared, and in altogether a pitiable plight. Frank watched it a few minutes, and then threw it out of the window, to help itself as best it might. Then his uneasy feelings came on again. "What *shall* I do?" murmured he. "I wish I had a willow whistle, like Ed. Jones's." There was a nice ivory whistle in his pocket, which his cousin had given him a few days before, but that was not a *willow* whistle. After thinking a few minutes he slowly sauntered out of the house and through the garden. He had a plan in his head now. There was a swamp not far from the house, where willows grew. He had been forbidden to go there, for the mud was deep, and the bogs gave a very insecure footing; but no harm would come of it, he thought; he would take care of himself, he said. He passed safely from one bog to another, cut a nice, smooth, willow stick, and returned nearly to the firm ground without accident, but at the last jump his foot slipped, and down he went floundering in the mud. Fortunately he was able to crawl out, but he was a sorry figure to look at; his nice clothes were plastered with filth, his face smeared, and his hair matted together. He had a good washing and was put to bed by his mother on his return home, and there he was obliged to bide the remainder of the long day, thinking over what had happened. Singularly enough a blue-bottle fly, perhaps his old acquaintance, came buzzing into the room to sympathize with him, and perhaps this helped to cure him of restlessness, for he seemed to be almost entirely contented with the abundance of good things around him for a long time afterward.

Tommy's Troubles.

WRITTEN FOR THE AGRICULTURIST BY SARAH E. DONMALL.

With a scowl upon his face, and tears in his eyes, Tommy sat in a chair, rocking to and fro in a very violent manner. The old chair creaked and creaked, and seemed to have half a mind to throw him backward.

Just then Aunt Lottie came into the room, and with much surprise asked him what was the matter. "Oh!" said Tommy with a groan, "I have so much trouble!" "Trouble!" repeated Aunt Lottie, "what in the world should trouble you?" "Well," said Tommy, "in the first place, I have lost my knife, and that troubles me. And my old Seabright hen that is setting, keeps jumping on and off her nest, and I don't believe she will hatch a chicken. Now I think these are troubles enough for any body." And the old chair creaked, and creaked again, while the tears ran down Tommy's cheeks faster than ever.

"Let me tell you how to get rid of these troubles," Aunt Lottie gently replied. "In the first place, the loss of your knife can be replaced, although it may take all your money to buy another; yet this will teach you to be more careful in future, and also to remember, that many of our troubles come upon us through our own carelessness. Now, suppose, by some accident one of your eyes had been put out, or you had lost both legs, like the poor soldier we saw in the hospital; then you would be obliged to sit in a chair, week after week, and no amount of money could replace them." "Oh dear!" exclaimed Tommy, "I would rather lose my knife than my legs any day." "But how are you going to get over the trouble about the old hen?" asked Tommy. "Oh very

easily," replied Aunt Lottie. "You are not certain the hen will leave her nest; perhaps she will mend her ways in future and stay at home, and then you will have had all this worry for nothing; and if she should not hatch a chicken, you cannot help it. She may set again in a few weeks, behave like a good, sensible mother, and hatch as many chickens as you desire. So never be discouraged; but always try to believe that whatever happens is for the best. If we could really make ourselves believe this, we should never be very unhappy about anything."

"Ah!" exclaimed Tommy, "you can never persuade me that it will be for the best, if my old Seabright leaves her eggs." "Perhaps I cannot," replied Aunt Lottie, "yet it may be for the best, in spite of your unbelief. I remember once reading of a lady who had a necklace stolen from her, and it was the means of not only making her very happy, but many others also; and if you would like to hear it I will tell you the story."

"In an eastern country there lived a king, whose name was Ismail Samanieh. He, with his army, had laid siege to and taken the city of Herat. Ismail had promised the inhabitants that he would not destroy the city or take their money from them, as he was a pious, just man, and would not do anything to oppress them. His soldiers, being in very great need of money, clamorously demanded that he should levy a tax on the city, but Ismail refused, and lest he should be tempted to violate his word, ordered his army to march away, and encamp a long distance from Herat. One day a vulture, hovering over the tents, espied a ruby necklace, that belonged to one of Ismail's ladies. Mistaking the redness of the stones for meat, he made a swoop at it, and carried it off. The flight of the vulture was watched, and he was seen to deposit it in a dry well, and this being searched, the jewel was recovered, together with several boxes containing great treasures, that had been hidden there by a robber.

"With this money Ismail satisfied his soldiers, who no doubt had thought themselves very ill used, just as you feel in not having your own way; and the lady must have felt quite as sorry to see the vulture carry off her necklace as you did to lose your knife. But you see it all happened for the best, as it was the means of more than supplying all the wants of Ismail's army, and the lady gaining more jewels than she supposed she had lost."

"Well!" said Tommy, rubbing his eyes, "I think I feel better, Aunt Lottie, and when I have any more troubles, will try to remember what you have told me." And the scowl disappeared from his features, and the old chair was not heard to creak any more for a long time.

The Chin Fever.

This affection is usually prevalent among boys from fifteen to eighteen years old. You don't know what the chin fever is perhaps. The first symptoms are a frequent inclination to pass the hand over the chin, sometimes over the upper lip. The sufferer has an expression as though impatiently expecting something, which delayed in coming. He will frequently gaze carefully into the looking glass, as though it were the mirror of fortune. As the trouble increases the afflicted boy may be seen stealing away to some retired place and striving to get a little ease by applying strong soapuds to his face; so anxious is he sometimes to get rid of his trouble that he has been seen to threaten to cut his throat with his father's razor. As usual, the quack medicine dealers take advantage of persons in such trouble, and advertise compounds warranted to cure the worst cases in from three to six weeks; but their applications only aggravate the symptoms, and cause more frequent turnings to the glass and more violent manipulation of the face. It is a relief to know that this trouble is not fatal, and disappears gradually as the beard grows, though we have known cases where some of the symptoms, especially passing the hand affectionately over the face, have remained through life. The best treatment for the patient, perhaps, is to let him alone, as advice in such cases usually aggravates the complaint. If any, however, should really wish to know what to do with the beard when it first appears, we answer, let it alone until it becomes unsightly, then trim it. Too early and frequent shaving will make it troublesome in after years; if not abused by continuous cutting it will be more likely to remain soft and silky.

Potatoes a Great Luxury.

Our friend, Mr. B. K. Bliss, the well-known seedsmen, relates the following: Last fall a gentleman of Springfield, evidently a man of *good taste*, described to Mr. Bliss some potatoes he had raised, greatly praised their excellent qualities, and told Mr. B. that he ought to try and procure a quantity to sell for seed, promising to send him some to test. Nothing more was said on the subject, however, until this spring, when the gentleman informed Mr. B. that the potatoes were so very fine, his family had used them all during the winter, and he regretted not being able to furnish any, as he had intended. Shortly after this the gentleman received a note from the man

who had at first let him have the seed for his fine potatoes, saying he had better keep all he had on hand of that kind, as they were the celebrated Early Rose variety, which Mr. Bliss, the seedsmen, was then selling at one dollar per pound. The gentleman, who had not before known the name of his favorite potato, felt that he had been rather extravagant in indulging in so costly a luxury; however, he made the best of it, and enjoyed the practical joke which had been perpetrated at his own expense.

Answers to Problems and Puzzles.

The following is the answer to the puzzle in the April number, page 149: Truth, honesty, and industry, go hand in hand with peace and prosperity....The following have sent correct answers to some of the puzzles published in previous numbers: L. M. Wright, John King, Theodore Ascherfeld, F. W. Kinsge, J. M. Rodkey, A. Lauson Root, George M. Dell, Edward B. Crafts, Willie Cundell, F. C. Marion, John Ed. John Anstie, F. B. Dawson, Henry E. Nelson, Mary C. Woodward, J. H. Brush, W. J. Bowman, Chas. B. Kellogg, J. F. Fillinghast, J. D. Oelch, Currie E. Seiford, Wm. A. Smith, Wm. K. Anndt, A. J. Tucker, A. J. Underhill, Walter Ellis, Lizzie Surface, Willie W. Rapert, Mrs. C. P. Norton, Jennie Flora White, C. V. Bradley, F. W. Griswold, L. E. Irwin, Alfred Woolley, Sarah Montier, Molliah J. Doggel, A. N. Daniels, Frances H. Englebert, N. Jennie Fahn, "Hoosier," Wilson K. Hasbrouck, Oscar W. Baker, Mina M. Walker, Wylie McLorran, George F. Bearson, E. J. Deslandt, James Rose, J. Van Winkle, W. P. Gale, Jas. A. Greason, Chas. Hasbrouck, Wm. Brockway, Mary Wilkinson, David McNeil, Alice Clemans, Effie Belle Ladlow, Daniel W. Leitzel, C. G. Holloway, Addie and Frank Ferris, Geo. B. Stoum, Wm. E. Potter, Wm. B. Davis, Cornelia E. Hardisty, Enoch J. Bridge, E. O. Whittemore, Charles Wheeler, Linn Morrison, Bridge-water, Wm. Reynolds, H. Nicholas, Sanford Horton, Hattie E. Hawley, Horace Cook, J. E. Witterso, J. H. J. Bigler, A. K. Percol, H. L. Bailey, Charles A. Newhall, Annie La Petra, Berteaux Martinouet, C. G. Oswood, Helen M. E. Anderson, Lizzie Smith, "L.," Mrs. J. McCrkey, Robert Boyer, Gilbert L. Johnson, Willard C. Cornell, Wm. H. Herbert, W. H. Young, E. W. Parsons, "N. P. L.," F. E. Chadwick, J. P. Clark, J. Henry Jones, John Dime, Harvey N. Farley, W. M. Lucas, "H. S. Jr.," F. W. Downs.

New Puzzles to be Answered.



No. 204. Illustrated Rebus.—For those who talk much.



No. 205. Puzzle Picture.—A descriptive name which has sometimes been given to the people of the United States.



No. 206. Picture Conundrum.—What metal is this man?



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A GREAT NOISE IN THE BARN. — Drawn and Engraved for the American Agriculturist.

What this cat has to complain of, we do not know. It will be pleasant for our young friends to discuss the matter in the home circle. Perhaps rats are scarce in the barn where this singular meeting is held, and the chief of the family is advising some of the younger ones to emigrate. Perhaps he has found some good text in the *Agriculturist*, and is ex-pounding upon it. More likely he is a restless, hungry wanderer, who wants to stir up contention among the sleek, well-fed community, that he may profit by their quarrels; two of his audience are already snarling over their supper. If this be the case, he was probably brought up by some low politician, and learned from him one of the common tricks of the trade. We cannot tell from his looks whether he is a Republican, a Democratic, or a Woman's Rights cat. We leave our readers to make their own guesses on these and all other points, and thus have their own fun over the picture.

Only a Little Sunbeam.

A beam from the setting sun darted swiftly through the air, glanced through the window pane, and made a golden spot upon the carpet where a child was sitting. The little one had been peevish and fretful, and his mother was weary with trying to soothe him. But as he saw the bright sunbeam and strove to grasp it with tiny fingers, he looked up with a smile, as though the light had entered his own heart and shone forth from his face. To an instant the mother's heart responded with gladness, and, pressing the babe to her breast, she covered it with kisses. Just then the father looked in. All day he had been harassed by business cares; many things had gone wrong, debtors had disappointed him, some of his workmen had been unfaithful, and a gloomy frown rested upon his brow. But the light of the sunbeam which had cheered

the mother, now chased the clouds from his sad face, and a happily spent evening followed by refreshing sleep gave him new vigor and a kinder heart for his work on the following day. The poor newsboy to whom he gave an extra price for his morning paper felt some of the warmth which the sunbeam had imparted; an unfortunate debtor wondered at the change which a single night had made, when his account was so arranged that it should not crush him; and the clerks declared it a pleasure to work when their employer was so cheerful. So the little sunbeam was not lost, although it shone but for a moment.

Poor Taste.

"What's the price of butter?"—We overheard this inquiry a few days ago at one of our city markets, and turned to look at the speaker. She was expensively dressed, and took no pains to conceal half a dozen showy and probably expensive rings upon her fingers. The dealer of course showed her a good article, at sixty cents per pound. "Got any cheaper?" asked the woman. (A lady would have said "Have you," instead of *got*.) Samples were shown at fifty-five cents, then at forty-five, and finally the lowest priced article at forty cents. It was very powerful butter—a sniff of it left an unpleasant memory for a week—but it suited the customer, and she purchased several pounds—perhaps to feed the sufferers at a cheap boarding house, perhaps for the servants in her kitchen. We couldn't help thinking of those rings and that butter.

A few days ago, the agent of an accident insurance company entered a smoking-car on a Western railroad-train, and approaching an exceedingly gruff old man, asked him if he did not want to "take out a policy." He was told to get out with his policy, and passed on.

After riding about half an hour, an accident occurred to the train, and the smoking-car ran over the sleepers, causing much consternation among the passengers. The old man jumped up, and, seizing a hook at the side of the car to steady himself, called out, "Where is that insurance-man?" The question caused a roar of laughter among the passengers, who for the time forgot the danger,

What it Cost.

A gentleman in business in this city has for years made a practice, which is common with many, of inviting his customers and friends out to "take a drink" or a cigar. A friend endeavored to convince him that he was spending too much in this way, aside from other and stronger objections to the practice. The gentleman insisted that the cost was a mere trifle, but to make sure of it he adopted the following plan: Each time he spent any thing for this purpose, he deposited an equal amount in a box in his safe, keeping no account of it. At the end of three months he counted this deposit, and found there, to his astonishment, over three hundred dollars. The friend who related the incident to us said he had just left the surprised man, who was still looking at the pile of bills and thinking deeply. Perhaps he was reckoning the amount of comfort and pleasure the sum would have brought to the home circle, if properly used, or how it would have helped in taking up some note when he was "short." Probably he has received some new ideas which will do him much good, and not injure his customers.

Wear your learning, like your watch, in a private pocket, and don't pull it out to show that you have one; but if you are asked what o'clock it is, be ready to tell it.

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"A GOOD THING."—HOW TO GET IT.—Would you know what you can do best? What calling or pursuit to follow in life? And how to make the most of yourself? Read the **PHRENOLOGICAL JOURNAL**. It has a very large circulation, is now in the 4th vol.; and only \$3 a year. The Journal and Agriculturist, \$3.50. Address S. R. WELLS, or ORANGE JUDD & CO., New York.

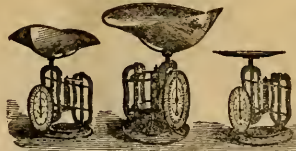
A NEW CLASS IN PRACTICAL PHRENOLOGY is forming. For Circular with full particulars address, with stamp, "PHRENOLOGICAL JOURNAL," New York.

SUPPORT FOR OLD AND YOUNG!—The Sensitive Fish swims thousands! Sent by mail to any address on receipt of 10 cents and stamp.

F. J. PHILLIPS, Providence, R. I.
You never saw so great a curiosity.
STENCIL tools and stock, cheapest and best. METCALF & SONS, 101 Union-st., Boston, Mass.

WANTED IN BUYING.

WANTED IN SELLING.



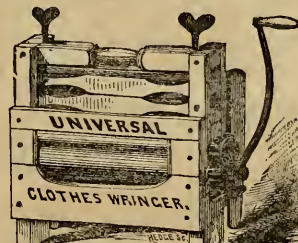
Shaler's Family Scales

Are adapted to meet a great want in everyday life. They are especially designed for the use of families in town or farmers in the country, and are equally well adapted for all ordinary purposes of weighing. THE SHALER FAMILY SCALES ARE INDISPENSABLE TO THE HOUSEWIFE. They are used without weights; the pounds and ounces of any substance placed in the pan are instantly and accurately indicated upon the dial, as plainly as the hours and minutes are shown upon the face of a clock. Upward of two years' constant use has proved their entire ACCURACY and DURABILITY. Three sizes are now offered as follows:

To weigh 5 oz. to 12 lb., price.....\$3.50
To weigh 5 oz. to 25 lb., price.....4.50
To weigh 10 lb. to 60 lb., price.....6.50

Thorough Canvasers wanted in every town and county in the United States and Canada, to whom exclusive right of territory will be given. Liberal discounts made. Nothing so well adapted to the purpose has ever before been offered, and they meet with ready sale. Agents are making from \$10 to \$30 per day. Samples sent on receipt of price. Orders from foreign countries solicited.

Manufactured by J. W. NASH & CO., 13 Howard-st., New Haven, Conn., from which place all goods are shipped.
Address ALVAN BUSHNELL, General Agent, No. 52 Cortlandt-st., New York.



THE UNIVERSAL CLOTHES WRINGER

IMPROVED WITH

Rowell's Patent Double Gear,

and the New Clean Extension. The only Wringer having the Patent STOP, without which Good Wringers fail to gear, and are of no use when most needed in wringing large articles.

Canvasers and the trade West supplied from our Depots in Chicago and St. Louis.

Large discounts to the trade everywhere. The celebrated Dory Washing Machine sold also.

R. C. BROWN, General Agent, Wringers of all kinds repaired. 32 Cortlandt-st., New York.

COLGATE & CO'S AROMATIC VEGETABLE SOAP,

Is particularly adapted to the delicate Skin of Females and Infants.

Sold by all Dealers in Perfumery and Toilet Articles.

PRINCE & COS. AUTOMATIC ORGANS AND MELODEONS.
Forty thousand are now in use
BUFFALO, N.Y. CHICAGO, ILL.

50 MORE AGENTS WANTED immediately to sell the improved "SILVER'S PATENT BROOM." Prices reduced. Sample by mail, pre-paid, \$1.25. For full particulars see April Agriculturist, and send for Illustrated Circulars to
CLEGG & CO., 207 Fulton-st., New York.

DR. DIO LEVINS' Training School, for Teachers of the New Gymnastics, Boston, Mass. Next Session opens July 1st, 1868. Send for full Circulars.

American Waltham Watches.

THE BEST! THE CHEAPEST!

Recommended by Railroad Conductors, Engineers, and Expressmen, as superior to all others for steadiness, strength, accuracy, and durability.

Unscrupulous Dealers occasionally sell a worthless Swiss imitation. To avoid imposition, buyers should always demand a certificate of genuineness.

For sale by all respectable dealers.

Ask for a Waltham Watch, and take no other.

IT IS THE BEST. IT IS THE CHEAPEST.

C. O. D.

AMERICAN (WALTHAM) WATCHES.

Now universally acknowledged the Best and Cheapest Watch in the WORLD.

I will send to any address by Express a genuine WALTHAM WATCH, Chronometer Balance, Extra Jeweled, and in fine Silver Case, for \$2.25, to be paid on delivery, accompanied with certificate of American Watch Company, guaranteeing it to be in all respects as represented. The buyer to have privilege of examination in the possession of Express Company. The purchaser is reminded that the price named is only a small advance on that asked for the bogus watch of unknown make, of no real value and dear at any price, and manufactured only for the purposes of fraud and deception, necessarily sold under fictitious names and in such manner that the real swindler's name continues wholly unknown, and consequently redress becomes impossible.

Name and address must be distinctly written. Buyer to pay Express charge. Address

EUGENE BADGELEY, No. 137 Fulton-st., New York

PRICES REDUCED

For Woodruff's Improved Portable

BAROMETERS.

\$10, \$15, \$18, \$25.

Agents wanted. Send for Circulars.

CHARLES WILDER, Peterboro, N. H.



NEW METHOD OF WASHING CLOTHES.—Without LABOR! The Automatic Clothes Washer and Boiler. Rev. M. W. STAYLES, Inventor and Patentee. This boiler is self-acting, and dispenses with labor and the use of hot clothes. The hot air and steam by the action of heat, are poured upon and forced through the clothes, at the rate of nearly 300 gallons in 20 minutes, cleansing them perfectly without rubbing. It has been thoroughly tested and pronounced unequalled as a clothes washer.

No. 5, medium size, will fit any Stove or Range. Price \$10. Good canvasers and Agents wanted for every town in Eastern and Middle States. Entirely new opening for enterprising men. On receipt of price sample boilers sent to any address. Send stamp for Circular.

AUTOMATIC CLOTHES WASHER & BOILER CO., P. O. Box 688, General Agency, No. 19 Cortlandt-st., N. Y.

State and County Rights for Sale.

To Dealers and Large Planters.

Encouraged by the greatly increased demand for our Vines and Plants, we are growing an immense stock of the best quality for Fall Sale, which we will furnish on most favorable terms. Our manner of growing stock enables us to meet the requirements of dealers in the early fall. Parties interested would do well to correspond with us at once. Our stock includes Grape Vines, Strawberry, Raspberry, and Blackberry Plants; Gooseberry and Currant Bushes of every desirable variety.

Box 155, Pittsburgh, Pa.

ONE OUNCE OF GOLD.

Will be given for every ounce of adulteration found in "B. T. BABBITT'S LION COFFEE." This Coffee is roasted, ground, and sealed hermetically under letters patent from the United States Government. All United States "Lion" is saved, and the Coffee presents a rich, glossy appearance. Every family should use it, as it is fitter to twenty per cent stronger than other pure "Coffee." For sale everywhere. If your grocer does not keep this Coffee, and will not get it for you, send your orders direct to the store.

B. T. BABBITT,

No. 64, 65, 66, 67, 68, 69, 70, 71, 72 and 73 Washington-street, New York.

Waterman's Patent Cast Iron Roll Pans

For baking French Rolls, Gems, Pop Overs, Corn Bread, etc. The best article in this line, see editorial notice page 25 in Jan. No. of Agriculturist. Manufactured and for sale by the owners of said patent, RUSSELL & ELWIN MANLY & CO., New Britain, Conn., and at their warehouses in New York, Philadelphia, Boston, Baltimore, and San Francisco.

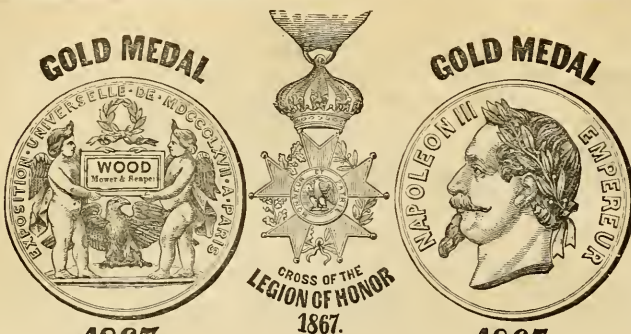
Inquire for Waterman's Patent Bake Pans. Recipes furnished with the pans.

Dealers please send for Illustrated Circulars.

SECRET SAFES,

Secure against Fire and Thieves, for the safe keeping of valuable papers, jewels, etc. Unprotected women, feeble men, families living in lonely places, and all others, should secure their valuables in these Safes. Send for circular. Agents wanted.

For sale by SECRET SAFE COMPANY, No. 251 Broadway, Opposite City Hall, New York.



1867. Walter A. Wood's "Prize" Mowers and Reapers ARE TAKING THE LEAD. 1867.

Triumphant at the Paris Universal Exposition, 1867. Two Grand Gold Medals and the Decoration of the "Cross of the Legion of Honor" conferred by His Majesty, Emperor Napoleon, upon the inventor, WALTER A. WOOD.

First Prize—GOLD MEDAL—at Great National Field Trial held at Auburn, N. Y., in 1865.
First Prize at Grand State Trial held at Rochester, N. Y., August 20th, 21st, 22d, 23d, 1867.
Together with over 150 first prizes in other contests.

Over 90,000 manufactured are now in use in Europe and America. The demand in 1867 greater than the supply. Increasing demand with increased facilities for manufacturing for the coming season, 1868.

WOOD'S "PRIZE" MOWER, retaining all its popular advantages, is improved by valuable additions.
WOOD'S SELF-RAKING REAPER, easily managed, of light draft, is the "Victor of Every Contest," and forms, with the new Mowing Attachment, the most perfect combined machine in use.

WOOD'S HAND-RAKING REAPER, readily changed from Reaper to Mower, and vice versa, recommends itself.

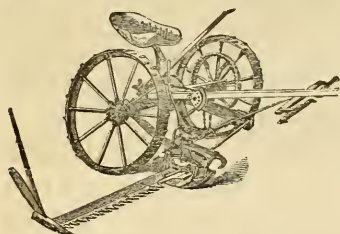
HAINES' ILLINOIS HARVESTER, especially adapted for the West, is made of good materials, and gives satisfaction.

Manufactured by the **WALTER A. WOOD MOWING AND REAPING MACHINE CO.,** Hoosick Falls, N. Y.

BRANCH OFFICES } New York City, 40 Courtland street, P. O. Box 2903. C. R. SKINNER, Agent.
AND } Chicago, Ill., 246 Lake street. C. E. WHITMAN, Agent.
GENERAL SALESROOMS. } Alexandria, Va. T. SEINER & CO. Agents.
} Madison, Wis. M. E. FULLER & CO. Agents.
Foreign Office, 71 Upper Thames St., LONDON, ENGLAND.

SEND FOR NEW DESCRIPTIVE CIRCULAR FOR 1868.

CLIPPER MOWER & REAPER.



This CELEBRATED and UNEQUALLED machine is manufactured by **The Clipper Mower & Reaper Company**, at their works at YONKERS, N. Y., where they have unsurpassed facilities for the business. The Machine needs no encomium. Farmers throughout all sections of the country who have used it, are ready and willing to testify to its great superior qualities for all work, combining, as it does, more points of excellence than any machine yet made.

Its principal characteristics are—SIMPPLICITY OF CONSTRUCTION, DURABILITY, EASE OF DRAFT, PORTABILITY AND COMPLETENESS OF FINISH IN ALL ITS PARTS.

These Machines are made of Four Sizes, to meet the wants of any farmer, as follows:

No. 1. One-Horse machine (20 in. wheel), 3 1/2 feet swath.
This Machine took the First Premium & Gold Medal, at the Great Trial at Auburn, N. Y., July 1865, and is the only practical One-Horse Machine in Market.

No. 2. Two-Horse (light) 29 in. wheel, 4 feet swath.
(medium) 32 in. wheel, 4 1/2 feet swath.
No. 3. " (large) 36 in. wheel, 4 1/2 and 5 feet swath.

Made also as a Combined Mower and Reaper.
Address THE CLIPPER MOWER & REAPER CO., Nos. 13 & 14 Cliff St., New York City.

The American Hay Tedder.

THE BEST and only perfect machine ever invented for

Turning or Tedding Hay.

Hay cut, cured, and stored in the Barn in One Day!!
THE QUALITY OF THE HAY CROP VERY MUCH INCREASED.

Very Great Ease of Draft.

It is very LIGHT, and so SIMPLE and DURABLE that it CANNOT GET OUT OF REPAIR.

BURT'S SELF-ADJUSTING

HORSE HAY RAKE,

MORE SIMPLE, MORE DURABLE, and EASIER OF OPERATION

than any other HORSE HAY RAKE in the Market.

MADE ONLY BY

AMES PLOW COMPANY,

Quincy Hall, Boston, Mass., and 53 Beekman-st., New York.

Send for Illustrated Circular.

THE EUREKA MOWER.

THE GREAT DIRECT DRAFT MACHINE.

IT HAS LESS DRAFT. IT MOWS FASTER.

DOES NEATER AND BETTER WORK.

Is handier easier, and is in every way superior to side draft machines. Manufactured by WILBIE, STEVENS & CO.,

Send for Illustrated Circular. Poughkeepsie, N. Y.

WARNER'S SULKY REVOLVING RAKE

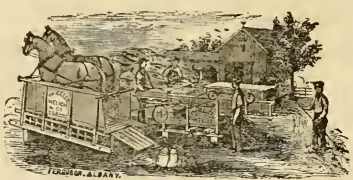
was illustrated in the Report of the Commissioner of Agriculture as "the best according to my idea of Horse-Rakes," and "superior to any other in use." Send for Descriptive Circular.

CLIMYER, DAY & CO., Mansfield, Ohio.

Manufacturers of Cook's Evaporator and Victor Case Mill, and standard Agricultural Machinery.

New York State Agricultural Works.

Established 1830.



Manufacturers of Wheeler's Patent Railway Horse Powers and Threshers and Cleaners, Lever Powers of the most approved kinds. Clover Haulers, Feed Cutters, Wood Sawing Machines, Shingle and Hauling Machines, Horse Forks, The Atlantic Cotton Gin and Condenser, (saw made without filing) etc., etc. Also dealers in the most approved Agricultural Implements. Our machines cannot be excelled in quality by any in the market, and we guarantee them fully as represented. Address

WHEELER, MELICK & CO., Albany, N. Y.

Illustrated Circulars and Price Lists sent on application.

BUY THE BEST!!

The Best are the Cheapest!

BUY PARTRIDGE FORKS!!

The First and Highest Prize.

A SILVER MEDAL.

Was awarded PARTRIDGE FORKS at the PARIS EXPOSITION, 1867. For sale by all the principal Agricultural and Hardware Stores.

SHEUWAY & COMPANY,

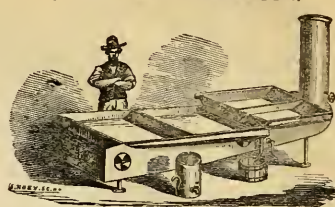
Manufacturers of Hay, Manure and Spading Forks, Garden Rakes and Potting Forks, at the

PARTRIDGE FORK WORKS, LEONISTON, MASS.

STENCH PLATES.

—Price, free by mail, with Ink and brush: Roman, 50 cts.; Italic, 65 cts.; Writing, 75 cts.; Old English, \$1; Fine Roman, very neat, cut with diamond smaller letter than any other set in the U. S., 75c. Agents wanted. H. OSBORN, South Danvers, Mass.

PLANT SORGHUM.



Youngman's Patent Sorghum Evaporator and Refiner removes all of the disagreeable Sorghum Flavor.

IT IS THE ONLY PERFECT EVAPORATOR.

The proprietors of the above Evaporator call the attention of the public to the superior merits of this invention. They claim that it is the best machine for making sorghum syrup and sugar, maple sugar, beet sugar, and other similar products.

It has the following Excellencies, viz.:

Excellencies.—1. It is the cheapest Evaporator ever made, requiring no arch, brick work, or other expenses after it leaves the manufacturer's hand. Any person who can afford to buy a lumber wagon, can buy one of these Evaporators.

2. It will do more evaporating, and with less fuel, in a day, than any other Evaporator, with the same capacity of pan.

3. It will make better syrup from sorghum cane juice than any other Evaporator invented, removing, as it does, all of the well-known disagreeable sorghum flavor.

4. It is remarkably easy to manage, as by a well-arranged system of clamps, the heat can be graduated to any degree under the pans, instantly. One man can work the Evaporator—with ease.

5. It is portable and may be lifted into a wagon by two or three men, without difficulty, and hence can be transported from farm to farm, or from field to field, with the greatest facility.

The foregoing are points of excellence which sorghum growers will appreciate, and in support of them we append the following high testimony.

Testimony.—"The great objection to the use of sorghum syrup has heretofore been its characteristic unpleasant flavor. But this flavor seemed to be entirely removed by your process, and the syrup assimilated in taste to the best sugar-house syrup."—"Letter from Hon. J. A. Newton, Commissioner of Agriculture, dated May 31, 1867.

Youngman's Evaporator now stands without a successful rival. It is highly approved by the most respectable authorities, and seems to be almost a national blessing. From the finishing pan the syrup flows in a continuous stream, perfectly purified and refined from all impurities, gummy, and objectionable substances, and equal to the best refined syrups. It is then in the best possible state for use. The Evaporator is very light and portable, as it can be easily lifted into a lumber wagon and conveyed from place to place. The capacity of the machine is from eight to ten gallons per hour, and the consumption of wood is no more than an old-fashioned box stove. For further particulars, see *Farmer's Implements in the Agricultural Report of the Patent Office for the year 1865.*

From the last pan, called 'the finisher,' the liquid comes out a most delicious syrup, pure as red-clover honey, and as free from the disagreeable vegetable taste as maple syrup. This machine has every excellent characteristic to recommend it. Every part is most efficient, and one man can make one hundred gallons of syrup in ten hours. The quality of the syrup is such that it is almost a life-time with proper care, and can be employed for making molasses sugar, or maple syrup, or beet sugar, quite as satisfactorily as it can be used when making sorghum syrup."—"Agricultural Editor New York Times, Weekly Edition, Nov. 19, 1867.

The Committee appointed by the Farmers' Club to examine Youngman's Evaporator desire to report that they went to Baltimore and there supervised the experiment with the above-named Evaporator; and it affords them satisfaction to report to the American Institute, that the operation of this new Evaporator exceeded their highest expectations.

The Committee were also well pleased with its portability. The small quantity of fuel required to make fifty gallons of syrup is also an economical item. The great simplicity and durability of every part of this device constitute another point of pre-eminent importance in the estimation of the Committee.—"Editorial from the Committee of Farmers' Club of American Institute to meeting of Club held in October, 1867.

I planted about three-fourths of an acre of cane, which was manufactured by Youngman's Evaporator. The cane was only of medium quality. The product is one load of syrup; two loads of fodder, equal to the best timothy hay; and a full two-horse load of seed, which for cattle feed is not excelled. The quality of the best of the cane, the best syrup of commerce, while the inferior is equal to the best making molasses.—"Rev. Joseph Stevens, Jersey Shore, Pa. Success.—Although the Evaporator is now in the market, it has already taken the first premium at six State fairs, and has taken the first premium over every other Evaporator wherever exhibited.

Premiums.—During the year 1868, the proprietors of the Evaporator (for the purpose of inducing a wide-spread trial of its merits) will present to every purchaser of the following three articles as a premium, viz.: A beautiful Silver-Plated Cake-Basket, Silver-Plated Cup, and Silver-Plated Butter-Dish. All of these articles are substantially made and of elegant design. They will be sent with the Evaporator secure of purchase, on receipt of the purchaser on receipt of the price of the Evaporator. Where Evaporators are sent, price to be paid on delivery. These premiums will be sent and assigned to the purchaser, as informed that the Evaporators have been paid for.

Price.—The price of the Evaporator complete is \$200. It will be sent to any address on receipt of the price, draft on New York City to the order of the General Agents, or on cash to the order of the General Agents, or on cash to the best method of payment. Machines will also be sent to any address, price to be collected on delivery, on receipt of the proprietary assurances by the undersigned of the responsibility of the parties ordering.

Full and explicit directions sent with each Evaporator. *Syrup made on this Evaporator is worth from 10 to 15 cents to fifty cents per gallon more than that made on any other.* For further information of Evaporators, address

ROBERT D. & SONS, 218 Fulton St., New York City, Or, BARTLETT, ROBINS & CO., Manufacturers, Baltimore, Md.

Advertisements, to be sure of insertion, must be received **BEFORE** the 5th of the preceding month.

TERMS—(cash before insertion):

Ordinary Pages, \$1.50 per line. Less than 4 lines, \$5. Open Pages (open without cutting), \$4 per line.

Page next to Reading Matter and last Page.—\$4.50 per agate line of space for each insertion.

No quack medicines, secret remedies, lotteries, gift enterprises, humbugs, or doubtful schemes of any kind, or cards from any parties who are not believed to be able and willing to fulfill what they promise are admitted. The readers of the American Agriculturist therefore have confidence in, and patronize those who have advertisements here inserted.

(Advertisements on this page, \$2.00 per Agate line of space.)

CRESYLIC COMPOUNDS

(Patented.)

COMPLETE DISINFECTANTS, SURE INSECT DESTROYERS, AND CURATIVE OF SKIN DISEASES, &c.

Cresylic Acid, well-known as certain in its effects for the above purposes, is now for the first time made available for common use. With license under Letters Patent various compounds are being manufactured by the undersigned, whose Family Soaps have long been a staple article in the market.

SHEEP DIP,

For Curing Scab and Destroying Insects on Sheep.

5 lb Canisters.....	\$1.25
10 "	2.50
50 "	10.00
100 "	20.00

Proportions are 1 lb Dip to 5 gallons water for 5 to 10 Sheep, according to size.

PLANT PROTECTOR.

In solution for destroying and repelling insects from Trees or Plants. In 1 and 2 lb Canisters, 60 cents, and \$1.00; larger packages same price as Sheep Dip.

CRESYLIC OINTMENT,

For Cure of Foot Rot, &c. In solution for killing insects, &c., on stock. In 2 lb Canisters.

CARBOLIC DISINFECTING SOAP. In solution for convenient use in washing Hoses, Doors, Fences, &c., destroying insects of all kinds, protecting from flies, curative of Sores, Scorchings, and Chafes of all kinds.

40 cents per lb., or in boxes, 5 dozen tablets, \$3.00.

LAUNDRY AND NO. 1 SOAPS.

For use in scrubbing and in the Laundry. Send for a descriptive pamphlet. For sale by Grocers, Seedsmen, Agricultural Dealers, Druggists, and by the manufacturers.

JAMES BUCHAN & CO.,
191 Elizabeth-st., New York.

LIFE IN THE WEST; OR, STORIES OF THE MISSISSIPPI VALLEY. By N. A. Moulter, Agricultural Editor of the New York Tribune. One large 12mo volume; pp. 360. Price \$1.00.

ORATORY—SACRED AND SECULAR; OR, THE EXTENSIVE SPORE SPEAKER. Including a Complete Guide for conducting Public Meetings according to the best Parliamentary forms. By Wm. Pettigrew. Introduction by Hon. John A. Bingham.

HISTORY OF A MOUTHFUL OF BREAD, AND ITS EFFECT ON THE ORGANIZATION OF MEN AND ANIMALS. By Jean Meun. Translated from the seventeenth French edition. Post-paid, 85¢.

THE PHRENOLOGICAL JOURNAL AND LIFE ILLUSTRATED. Has a very large circulation. Devoted to Education, Physiology, Psychology, Education, Art, Literature, with Measures to Reform, Elevate, and Improve Mankind, Physically, Mentally, and Spiritually. A first-class monthly Magazine at \$1 a year, with Agricultural and 28 works on "Short Hand," supplied by S. R. WELLS, Publisher, No. 389 Broadway, New York.

"Missouri Farm Register."

PARSONS & STARK'S "FARM REGISTER" of improved farms and unimproved lands now for sale in Missouri, Kansas, and So. Illinois, contains locations, descriptions, prices, terms, names of those offering to sell, and other valuable information concerning lands in those States. Every one desiring Western farms should have a copy. See advertisement in April No. of the Agriculturist. Send \$1.00 for a copy (no yearly terms), and no Circular.

PARSONS & STARK, Publishers,
St. Louis, Mo.

\$25 PREMIUM in outfit for Agents to sell Italian Bees. "The American Bee-Hive" and "The Bee-keeper's Text Book" revised and enlarged, 500 copies in 5¢. 4th Edition, by mail, 5 cents. "Hints to Bee-keepers," a practical pamphlet of 28 pages in neat pink covers. Send **FREE.** Write now, and you will not forget it. Address H. A. KING & CO., Nevada Ohio.

Nansomond Sweet Potato Plants. Of best quality, during May and June. Put up at carry safely long distances. By Express, Price, 50c. \$2.25; 100, \$3.50—500, \$10.00—1000, \$20.00. By mail, pre-paid, 1/10 for \$1.00. This variety is successfully grown at the North. Send for our Circular of directions, etc. Address **Murray & Co.,**
Foster's Crossings,
Warren Co., Ohio.

THE MASON & HAMLIN ORGAN COMPANY,

Manufacturers of the celebrated

MASON & HAMLIN CABINET ORGANS,

Respectfully announce that they have commenced the manufacture of another grade of Organs, which will be known as

THE METROPOLITAN ORGANS.

These instruments are elegantly and durably made; contain modern improvements exclusively controlled by the Mason & Hamlin Organ Co.; have great power and fine quality of tone; and in general excellence are second only to the Mason & Hamlin Cabinet Organs. They will sell at prices which compete with those of inferior instruments. Style E, seven stops.....\$225
Style D, six stops.....200
Style C, six stops.....175
Style A, one stop.....150

\$25 liberal discount to Churches, Clergymen, and Schools. Circulars with particulars and illustrations free to any address.

MORE THAN FIFTY STYLES

Of the Mason & Hamlin Cabinet Organ Co. are now manufactured, varying in price from \$100 to \$1,000 each. They have recently been awarded a *First Prize Medal* at the *Paris Exposition*, having taken more than seventy highest premiums within a few years. A circular with full particulars and illustrations will be sent to any one desiring it. Address

Mason & Hamlin Organ Co.,
206 Broadway, N. Y., or 154 Tremont-st., Boston, Mass.

QUARTER OF A MILLION PIANISTS

ARE INDEBTED TO "RICHARDSON'S NEW METHOD" for their ability to play well. This book continues to be the Standard Method of Piano Instruction throughout the country. Its Easy Lessons, Pleasing Exercises, and Charming Recitations, have made it extremely popular, while its rare adaptation to all grades of advancement causes it to be not only valuable to a person during private studies but to the teacher as well. Post-paid.

OLIVER DITSON & CO.,
Publishers,
217 WASHINGTON STREET, BOSTON, MASS.

The Premium Harvester of America.



Awarded the Highest Premiums at the most important Field Trials ever held in any Country.

20,000 Sold in a Single Season.

90,000 Now in Use.

Circulars forwarded by mail.

Manufactured by ADRIAN, PLATT & CO., (Manufacturers, P.O. Keokuk.) 165 Greenwich-st., New York. ALTMAN, MILLER & CO., AKRON, OHIO. A. P. RICHARDSON & CO., WORCESTER, MASS.

FAIRCHILD'S Patent BAG-HOLDER and TUNNEL combined.—The latest out, the Cheapest and Best—combining the TUNNEL with the BAG, and which the BAG-HOLDER is impractical and worthless. This NEW Invention meets a want long felt by Farmers, Millers, Grain Dealers, Country Storekeepers, Newspaper Publishers, Postmasters, and by all who have Bags to fill. Needs only to be seen to be appreciated and wanted. Durable, compact, simple, and very cheap. Will soon be for sale by all dealers in Agricultural Tools. Made by the **FAIRCHILD & TAYLOR Agricultural Tool Co., Chicopee Falls.** Will be sent to any address on receipt of retail price, \$3.50. Liberal discount to the trade. Circulars with cuts and full description sent on request. State Rights, except in Michigan, Canada, and the United States, for sale or application, address E. C. FAIRCHILD, Chicopee Falls, Mass. **Preserve this advertisement.**

BEST VARIETIES OF STRAWBERRY PLANTS BY MAIL.

We will furnish strong and vigorous plants of the following varieties by mail, at prices unexcelled, guaranteeing their genuineness and safe carriage: **Jacobs—Our No. 700, Kitley's Goliath, Nimrod, Naomi, Lucida Perfecta**, each, 41¢ per doz.; \$3.50 per 50; \$6 per 100. **Fullmore, Triomphe de Gand, Wilson, Golden Seeded, Burr's New Pine, Agriculturist and Leming's White**, 50 cents per dozen. One dozen of each of the above kinds for \$8; or 50 Jennica and one doz. of each of the others for \$10. Box 153, Pittsburgh, Pa.

100,000 American Arbor Vite hedge, size two and sizes, wholesale and retail at very low prices. Price sent free. A. P. CHAPMAN, 141 Fulton & 50 Vesey-sts., N. Y.

Shaler's Family Scales are wanted in everyday life. See advertisement on page 193.

A PERPETUAL EXHIBITION.

Whitlock's Horticultural Advertiser

AND

ALL NURSERIES IN ONE, COMBINED.

245 BROADWAY, NEW YORK.

Any one having for sale articles of interest to Agriculturists or to families, should be represented by a sample.

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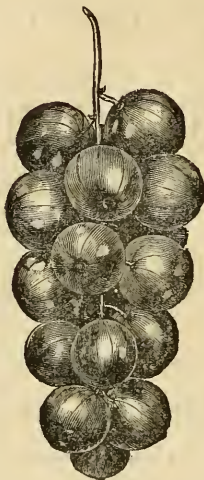
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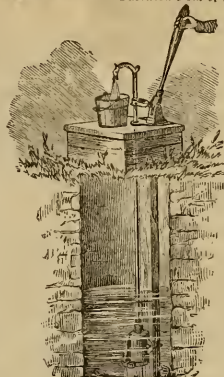
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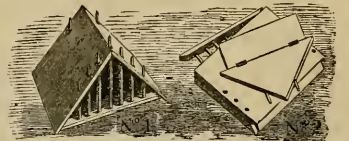
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Mr. Fuller has written several of our most popular horticultural works, but a member of many of the prominent scientific societies of Europe and America, he is believed that our subscribers and the general public will be pleased to learn that the services of so eminent a horticulturist have been secured to aid in disseminating useful information among the masses.
L. L. WHITLOCK, Publisher.

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General Family Newspaper,
it will also furnish accurate and fresh reports of all matters of importance to

THE AGRICULTURIST AND GARDENER.

This department is under the supervision of ANDREW S. FULLER, who will not only write on the subjects in question, but will also attend the meetings of the Farmers' Club, and will daguerretype their proceedings for the benefit of our subscribers. We shall also be glad to receive and print in this department of **THE SUN** the results of the practical experience of our readers in agriculture and horticulture. Communications on these topics may be addressed to the Agricultural Editor of **THE SUN**, New York City.

A Liberal Offer.

We have received the following note from Mr. FULLER, which speaks for itself:

To the Publisher of *The Sun*.

Sir: One of the great pleasures of an editor is in knowing that his labors are appreciated by his readers.

As I have taken editorial charge of the Agricultural and Horticultural Department of **THE SUN**, I am desirous of ascertaining how many of its readers take a special interest in these subjects.

For the purpose of obtaining the desired information, I make the following proposition:

To every subscriber to **THE WEEKLY** or **SEMI-WEEKLY SUN**, who shall send in his name with the full subscription price, before the 1st of May next, I will forward by mail, carefully packed and postage paid, six root cuttings each of the Wilson's Early and Kittanning blackberry, or two good vines of the Concord grape. The one-year old plants of these new and most excellent blackberries are now being sold by our nurserymen at prices ranging from \$4 to \$9 per dozen; and the cuttings which I offer will make equally as good plants the first season, besides affording stock for their further propagation.

I do not offer these cuttings or vines as a premium, but having a quantity on hand, which I know to be genuine, I tender them to the agricultural readers of **THE WEEKLY** and **SEMI-WEEKLY SUN**, as an earnest of my good will, and the pleasant relations which I hope to establish with them.

A. S. FULLER.

The price of **THE WEEKLY SUN** is fixed at
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and while it is offered at this low rate, our friends will bear in mind that it is only by a very large subscription list that we can be enabled to derive from it anything like a fair compensation for the trouble and expense involved in its publication. It is true that it is printed upon a sheet of more convenient form and dimensions than most of the other general weekly newspapers of this city; but the very other consideration and point which give it value, and make its contents so quickly and easily accessible to every reader, are gained by unusual care and labor on the part of its editors. It is comparatively easy to fill a big blanket paper up with long and uninteresting articles; the work of condensation requires labor, talent, and continual watchfulness.

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Disclosing all the tricks, adulterations, deceptions, and impositions practiced on "tea" drinkers. Including the "dodges" and modus operandi of the

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with full instructions by which persons of ordinary intelligence and no malformation of the organs of speech, may become Ventriloquists, and secure a source of infinite amusement for themselves and others.

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(Advertisements on this page, \$250 per Agate Line of Space.)

ESTABLISHED 1861.

THE GREAT AMERICAN TEA COMPANY

HAVE RECEIVED
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22,000 HALF CHESTS by ship *Golden State*.
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In addition to these large cargoes of Black and Japan Teas, the Company are constantly receiving large invoices of the finest quality of Green Teas from the Moyang district of China, which are unrivaled for fineness and delicacy of flavor.

To give our readers an idea of the profits which have been made in the Tea trade, we will start with the American houses, leaving out of the account entirely the profits of the Chinese factors.

1st. The American house in China or Japan makes large profits on their sales or shipments—and some of the richest retired merchants in the country have made their immense fortunes through their houses in China.

2d. The Banker makes large profits upon the foreign exchange used in the purchase of Teas.

3d. The Importer makes a profit of 30 to 50 per cent. in many cases.

4th. On its arrival here it is sold by the cargo, and the Purchaser sells it to the Speculator in invoices of 1000 to 2000 packages, at an average profit of about 10 per cent.

5th. The Speculator sells it to the Wholesale Tea Dealer at a profit of 10 to 15 per cent.

6th. The Wholesale Tea Dealer sells it to the Wholesale Grocer in lots to suit his trade, at a profit of about 10 per cent.

7th. The Wholesale Grocer sells it to the Retail Dealer at a profit of 15 to 25 per cent.

8th. The Retailer sells it to the Consumer for ALL THE PROFIT HE CAN GET.

When you have added to these eight profits as many brokerages, cartages, storages, cooperages and wastes, and add the original cost of the Tea, it will be perceived what the consumer has to pay. And now we propose to show why we can sell so very much lower than other dealers.

We propose to do away with all these various profits and brokerages, cartages, storages, cooperages and wastes, with the exception of a small commission paid for purchasing to our correspondents in China and Japan, one cartage, and a small profit to ourselves—which, on our large sales, will amply pay us.

By our system of supplying Clubs throughout the country, consumers in all parts of the United States can receive their Teas at the same price (with the small additional expense of transportation), as though they bought them at our warehouses in this city.

For manner of getting up Clubs, see former advertisement in this paper.

Parties sending Club or other orders for less than thirty dollars had better send Post-office Drafts or money with their orders, to save the expense of collections by express; but larger orders we will forward by express, to collect on delivery.

Hereafter we will send a complimentary package to the party getting up the Club. Our profits are small, but we will be as liberal as we can afford. We send no complimentary package for Clubs less than \$30.

Parties getting their Teas of us may confidently rely upon getting them pure and fresh, as they come direct from the Custom House stores to our Warehouses.

We warrant all the goods we sell to give entire satisfaction. If they are not satisfactory, they can be returned at our expense within 30 days, and have the money refunded.

The Company have selected the following kinds from their stock, which they recommend to meet the wants of clubs. They are sold at cargo prices, the same as the Company sell them in New York, as the list of prices will show.

PRICE LIST OF TEAS:

OOLONG (Black), 70c., 80c., 90c., best \$1 75 lb.
MIXED, (Green and Black), 7c., 80c., 90c., best \$1 per lb.
ENGLISH BREAKFAST (Black), 90c., 90c., \$1, \$1.10, best \$1.20 per pound.
IMPERIAL (Green), 90c., 90c., \$1, \$1.10, best \$1.25 per pound.
YOUNG HYSON (Green), 90c., 90c., \$1, \$1.10, best \$1.25 per pound.
UNCOLORED JAPAN, 90c., \$1, \$1.10, best \$1.25 per pound.
GUNPOWDER (Green), \$1.25, best \$1.50 per pound.
Consumers can have from 50c. to \$1 per pound by purchasing their Teas of this Company.

COFFEES ROASTED AND GROUND DAILY.

GROUND COFFEE, 20c., 25c., 30c., 35c., best 40c. per pound.
Hops, Saloons, Boarding-house keepers, and Families who use large quantities of Coffee, can economize in their article by using our FRENCH BREAKFAST AND DINNER COFFEE, which we sell at the low price of 30c. per pound, and warrant to give perfect satisfaction.

ROASTED (Unground) 30c., 35c., best 40c. per lb.
GREEN (Unroasted) 25c., 30c., 35c., best 35c. per lb.

N. B.—All villages and towns where a large number reside, by Clubbing together, can reduce the cost of their Teas and Coffees about one-third (beside the Express charges), by sending directly to "The Great American Tea Company."

BEWARE of all concerns that advertise themselves as branches of our Establishment, or copy our name either wholly or in part, as they are *bogus* or *imitations*. We have no branches, and do not, in any case, authorize the use of our name.
Post-Office orders and Drafts, made payable to the order of "The Great American Tea Company," Direct letters and orders to the (as below, no more, no less)

Great American Tea Company,

Nos. 31 and 33 VESEY-ST.,

Post-Office Box, 5643, New York City.

Accumulated Assets, \$9,159,753 91

Divisible Surplus January 1st, 1868, \$1,642,425 59

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The Progress of the Company for the Past Four Years Will be seen in the following statement:

	Assets.	Increase of Assets over previous year.
1864.....	\$3,658,755.55.....	\$1,003,347.63
1865.....	4,841,093.70.....	1,182,338.15
1866.....	6,727,816.65.....	1,887,722.95
1867.....	8,774,326.01.....	2,046,509.36
Total Increase.....		\$6,120,788.09

This increase of over Six Million Dollars in the Assets during the past four years has been attained, notwithstanding that nearly Two Million Dollars for Losses, and over One Million Dollars for Dividends have been actually paid out during that period.

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CHARLES WHIGHT, M. D., Asst. Med. Examiner.

Policies issued in the year 1867 will receive their dividends on the payment of the second Annual Premiums. Existing Policies entitled to the Dividend declared in 1866, will receive two Dividends during this year.

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From 10 to 25 per cent.
BEST JAPAN TEA, \$1.00.
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SPECIAL COLORED TEAS, 30 Cents.
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SUGARS, all grades, at REFINERS' PRICES; every thing used in every Family cheaper than any other Store in New York.

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EVERY FARMER SHOULD HAVE

FAIRBANKS

THE STANDARD.

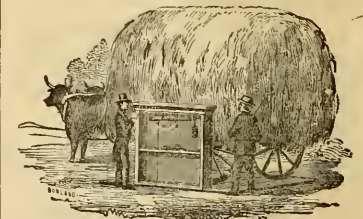
These Scales have been manufactured by the Original Inventors for nearly 40 years, and are regarded throughout the country as the Standard; they were referred to as such by the Judges at the

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Nearly two hundred different modifications are made, adapted to every branch of business. Among which are:



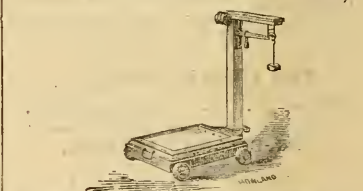
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Capacity, Two, Three, Four, Five, Six & Ten Tons.

For weighing loaded wagons, carts, live stock, produce, &c.

These Scales may be placed in the barn floor, in the yard or by the roadside, where they can be made available for all entire neighborhood.

PORTABLE PLATFORM SCALES,



WITH AND WITHOUT WHEELS.

Convenient, accurate, and not liable to derangement.
No. 1.—Platform, 23 by 30 inches....Capacity, 2000 pounds.
No. 2....do, 23 by 31 do....do, 1500 do.
No. 3....do, 23 by 32 do....do, 1000 do.
No. 4....do, 20 by 38 do....do, 1200 do.
No. 5....do, 17 by 35 do....do, 800 do.
No. 6....do, 16 by 25 do....do, 600 do.
No. 11½....do, 15 by 21 do....do, 400 do.

UNION OR FAMILY SCALES.



We invite special attention to this modification as being particularly adapted to household use. This fact, and its acknowledged accuracy, led to its adoption as one of the premiums offered by the *American Agriculturist*. Pamphlets with illustrations and full descriptions of the various modifications of Scales, furnished upon application by mail or otherwise.

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VOLUME XXVII.—No. 6.

NEW YORK, JUNE, 1868.

NEW SERIES—No. 257.



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THE CAT-BIRD.—(*Galeoscoptes Carolinensis*).—Drawn and Engraved for the American Agriculturist.

The Cat-bird receives its common name from its call note, which closely resembles the mewling of a cat, and is used by both sexes. This is not a particularly agreeable sound, yet indicating, as it does, the fact that these beautiful birds are entirely at home in the thickets or shrubbery whence it proceeds, we like it. The cat-bird

seeks rather than shuns the abodes of men. Its food is chiefly seeds, berries, and insects, and though it takes some of the fruit, its presence in our gardens and orchards is productive of great good. The song of the male is a soft, sweet melody, not unlike the songs of the brown thrush and mocking-bird. It is a good mimic, also, and

caged it becomes quite proficient in this way, and may be taught to repeat a whistled strain much as the mocking-bird will do. The alarm note is an angry chatter. The nest is built in shrubs, and four or five bright green eggs are laid. These birds continue in our latitude from April to about the first of November.

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AMERICAN AGRICULTURIST.

NEW-YORK, JUNE, 1868.

A late, wet season makes June a hard month for the farmer. Under the most favorable circumstances no month of the year puts his executive abilities more thoroughly to the test. Without well-matured plans, and a knowledge of about how much the labor, both of men and animals, will accomplish, the best farmer will be likely to fall behindhand. The weeds grow so fast in moist, warm weather that the fields must be hoed almost as soon as planted, and the growth of the grass in the meadow is so rapid, that the necessity for laying down the hoe for the scythe is often a most trying one. It is very rare, in our latitude, that June is not, on the whole, a prosperous time for the crops. Very dry Junes are of rare occurrence, and a drouth at this season is productive of great injury—quite as much so as a sharp frost. Farmers whose spring work has been delayed by the wetness of the ground have in this way the value of thorough draining impressed upon them. Much drained land was this year fit for plowing and planting early in April, while that of precisely the same character, not drained, yet not what would be called wet land, will not be fit to plow before the first of June, even if the weather be dry the latter part of May.

Hints about Work.

Buildings.—There are certain things which can be better done at this season than at any other. The barns are nearly empty. They must be prepared for the new crops of hay and grain. If a barn should need shingling, this ought to be done when it is empty, so that the nails which fall may be cleaned up. We know a case of a cow which died from swallowing nails in the hay. These were found in a large mass in the animal's stomach. Hay lofts and bays should be cleaned, and all the hay seed and rubbish removed before any hay is placed in them. Old hay is good, but it is best not to allow it to accumulate from year to year.

Working Animals must be well fed if one expects them to work well. Oxen worked all day and turned into the pasture for the night without grain of any kind, cannot be expected to do much work. Give horses thorough daily grooming. A gill of oil-meal, mixed with the feed at each meal, will give a glossy coat, and is an excellent ingredient in any mixed feed given to them, or other animals.

Cows are now at pasture, and the fresh grass adds greatly to the flow of milk and to its richness and color; but this should not lead us to withhold all grain. A small quantity of oil-meal or corn-meal, or the two mixed, say one quart divided between the morning and evening, should be given.

Manure.—If cows are yarded or stabled, a large quantity of manure is saved. We are too apt to look upon the manure crop as the harvest of the winter. With reasonable forethought and diligence the manure heaps will grow quite as fast in summer. We have one great advantage—fermentation takes place much more rapidly; hence accumulations of vegetable matter, fresh, or in form of muck and peat, if composted with stable manure, ashes, or lime, very rapidly ferment, and ripen into homogeneousness, ready for use in the autumn.

Swine are widely employed as the summer manure makers, and they are worth so much more as rooters than "tamed," that it is not worth while to "ring" or "tame" them, until they are penned to fatten. Confine them where they may have conveniently, sods, weeds, and all sorts of green rubbish thrown to them to work over. If upon the manure of other stock, encourage diligence by scattering occasionally handfuls of corn about the heap. If muck or sods are used in the compost, swine will often tread it so hard as to arrest fermentation.

Sheep.—A few days after the ewes have been sheared all the ticks and most of the lice will prefer lamb to mutton, and be found upon the lamb. This is therefore just the right time to

clip the entire flock. We have great faith in the carbolic and creosylic soap dips for sheep, and when this article can be obtained, (and we must refer inquirers to our advertising pages), there is no need of having anything to do with either vegetable or mineral poisons, such as tobacco, arsenic, or mercury in any form. If sores, from too close shearing or sun scalds, occur, smear the wounds with an ointment of tallow and pine-tar.

Butter.—June butter is considered the best made during the year. Good butter makers pack it to keep the whole year. There is no difficulty about it if the buttermilk be thoroughly worked out, the butter salted one ounce to the pound, and worked again after standing 12 to 24 hours. It is packed in layers in firkins, with a thin layer of salt on the bottom, and salt between each layer. The butter must be packed airtight, if possible—that is, without holes—and pounded down flat and solid. The less butter is handled, the better, and the lower the temperature at which it is worked, provided it be soft enough to work thoroughly, the more waxy and firm will it be. If the tub cannot be filled at once, cover the butter with a strong brine.

Cheese.—The production of the best cheese is inconsistent with butter making from the same milk. It requires but a little more care, cleanliness, and painstaking, with good judgment, to make cheese bringing readily a high price, than to make that which is a drug on the market. See article on cheese making in the Am. Agricultural Annual for 1868.

Green Fodder Crops.—Sow corn in drills, 24 to 30 inches apart, for a succession of green fodder. This will keep up the flow of milk, and add greatly to the butter and cheese returns of the summer, especially if the pastures are a little overstocked, or the season is dry. Millet may be sown any time this month, for seed as well as for green fodder. Hungarian grass, a variety of millet, sown for hay, on land in fair condition only, will ordinarily yield a crop of two tons of good hay per acre.

Pastures may be benefited by top-dressings at any time, especially if close cropped. They respond at once if wash from the highways be turned upon them. Never overstock, but provide early green-fodder crops, to feed out before the fields are so far denuded as to be liable to injury from drouth.

Mowing Lands.—Clover which is clean enough for seed should be cut early, when first coming into bloom. Top-dress with fine manure, ashes and plaster, or guano and plaster, and a good crop of seed will be as sure as a crop of corn. Cut mixed grasses for hay, beginning when clover is in full bloom, before the heads brown, and cutting those fields first which have the most clover. Cure as much as possible in the shade—that is, in the cock, after thoroughly wilting in the sun. If the *Ox-eye Daisy* abounds in the grass, it is most important to cut it for hay before the stalks harden, and for the future welfare of the farm it is more important to cut it before the seeds are so nearly mature that they will ripen in the curing of the hay.

Root Crops.—Carrots and Rutabagas may be sown to as good advantage between the 1st and 20th of June, as earlier, considering the pressure of other work and the slight difference a few weeks make to these crops. Sugar Beets and Parsnips will make a fair crop, also, if put in as late as the first, but sowing should not be delayed after that time.

Field Beans.—This crop is generally planted before the 20th, if possible. Use only fresh, tender seed. Two-year-old seed will surely disappoint. See article in this and the previous number.

Cabbages can hardly be overrated as an economical article of cattle food. The only objection to raising cabbages as a dependence for green fodder in winter is, that their market price is usually so great we cannot afford to feed them out; but the same objection holds with regard to many other articles of human food. Set out the Flat Dutch, Drumhead, Mason, or other large varieties, after the middle of the month, in good soil, well manured with fine compost and top-dressed with lime.

Hoeing Corn and Potatoes.—All tillage of these crops goes by the name of hoeing, though done

with harrows, cultivators, or plows. The two-horse cultivators are fast taking the place of horse-hoes of the old patterns, and greatly simplify the operation of hoeing corn, by leaving so little for the hand hoes to do. The barrow should be used upon potatoes until they are fairly up, and the field is green. After this, light plows and cultivators do the work. There is no crop which requires more thorough weeding than potatoes, and none more generally neglected and more damaged by them.

Work in the Horticultural Departments.

It usually makes but little difference how unfavorable the spring months have been, the middle of June generally brings matters in the different departments to about the same point. The skillful gardener will have replanted where the cold rains have brought failures, and made up by extra care the delays caused by untoward weather.

Orchard and Nursery.

Shoots will push on old and young trees just where limbs are not wanted. Remember that the new tender shoot will soon be a hard, woody branch. A slight rub will now remove it, but if left a year, the knife must be used. Rub off these shoots when young and save cutting hereafter.

Pruning may be done this month, especially if large limbs are to be removed. Cut the limb close to the one from which it starts, and do not leave any stubs. Pare the wounds smooth, and brush them over with melted grafting wax.

Grafts will need looking to, and if two were inserted where one would be better, remove one of them. If some of the shoots on a graft are getting the advantage of the others, pinch them back.

Budded Stocks will often push such vigorous shoots as to need staking until they become strong.

Cultivation in the orchard has a twofold effect—it destroys the weeds, and leaves the surface in that light, mellow condition which enables it to answer the purposes of a mulch. Young orchards, with crops between the rows, should be cultivated with as much an eye to the trees as to the crops.

Mulching around newly planted trees should be put on before dry weather comes on. It is especially beneficial to cherries and other stone fruits.

Seed-Beds will need shading, as noted last month. Young evergreens will often rot or "damp off," without any manifest cause. Sprinkling fine sand or dry earth over the bed will often check it.

Nursery Stocks, intended for budding, should be kept in growing condition by good cultivation.

Thin the Fruit.—It is not often that this is done as thoroughly as it should be, and it is seldom that a tree bears a decent crop which would not have been better had half of the young fruit been removed.

Insects will demand attention this month. See notes given in May. One great trouble with insects is that they are left too long without molestation, and most people do not notice their ravages until the mischief is done. Whoever loves trees will be frequently among them, and observe the condition of each. A colony of caterpillars may often be disposed of in a few minutes, which, if left for a week, would prove a troublesome enemy.

Borers mostly lay their eggs this month; these are usually deposited on the bark of the tree near the ground, and the young grubs when hatched eat their way into the tree. Be sure that there are no grubs already in the tree, and some of the many preventives may be used. One of the most efficient of these is to wrap the trunk at the base with stiff paper, drawing away the earth around the tree, and replacing it to cover the lower edge of the paper. We have already given other expedients.

Curculio is only effectually managed by jarring the trees and catching the insects. On large trees a limb may be sawn off, to leave a stub which may be struck with a wooden mallet, but small trees can be easily shaken by a sudden jar with the hand.

The Stag which appears on the leaves of pear

and cherry trees is killed by dusting with air-slaked lime; it is said on good authority that dry dust of any kind will answer the same purpose.

Plant-Lice, often troublesome on trees, are killed by the use of an infusion of tobacco or of quassia.

Fruit Garden.

The *Insects* mentioned above, and others, will need close attention here; they are more easily managed in the fruit garden, as the trees are, or should be, dwarfs. Much can be done by hand-picking, which is, indeed, the only way of managing some of the larger ones that infest the grape.

Currants will need care to protect them from the currant worm. See article on page 185, last month. Many useless shoots will appear upon the bushes, which may be rubbed out. Green currants often bring a higher price than ripe ones, and where this is the case it is better to dispose of a portion of the crop in the green state.

Strawberries will now demand attention. The rows should be mulched, if not already done. Straw or coarse hay is best. Saw-dust and tan-bark soil the fruit. Keep the runners cut where close culture is practised, and pull up large weeds. Some hints on picking are given on page 234.

Blackberry Bushes should have the new growth pinched at the height of 4 or 5 feet, to make them throw out side branches for next year's fruiting.

Grape Vines.—The management of young vines has been sufficiently treated of in articles upon the grape in the preceding numbers. The future success of the vine depends upon getting a good strong cane to start with, and already sufficient directions have been given for securing this. Superfluous buds will appear, which should be rubbed off. Young vines will be apt to be injured from over-bearing, and one or two bunches are enough to a cane. If mildew appears, use sulphur. Keep the young growth carefully tied up to the trellis.

Kitchen Garden.

Do not let disappointment from rotting of seeds, killing by late frosts, or bad luck of any kind, prevent from trying again. Those who have been deterred, by a press of work, from giving proper attention to the garden, can do considerable even now. It is true, the products will not be early, but they will be better than none. Seeds sown in the warm soil come on rapidly, and with a little exertion Tomato, Cabbage, Pepper, and other plants, can be had, and a pretty fair family garden yet be enjoyed.

Asparagus.—The rule is to stop cutting when peas become plenty. If the bed has become weedy, hoe it over carefully, give a dressing of manure or compost, and let the plants grow.

Beans.—Plant succession crops of bush beans. It is early enough in most places for Limas, on the cultivation of which see note on page 225.

Beets and Carrots.—Thin and weed. See article on the subject last month, on page 188. The thinnings of beets are excellent to use as "greens."

Cabbages.—The early sorts, in the best-managed gardens are ready for use or sale this month, but in most family gardens there are no facilities for early plants, and those from an open air seed-bed are now transplanted. Keep the ground loose among young plants by the use of the rake. If the plants are troubled by cut-worms, look for their holes (usually covered by a leaf) and dig them out.

Celery.—The seedlings should be thinned and weeded. Henderson, in his article on celery, recommends shearing off the tops of the young plants, to make them grow stocky. The main crop is best set in July, but early plants may be set in well-manured trenches as soon as large enough.

Corn.—Sow at intervals of two weeks, and have a good supply for drying for winter use.

Capsicums or Peppers.—Put out in a well-manured bed in a warm place, and give good cultivation. Set in rows 2 feet apart and 15 inches between.

Cucumbers.—Set out the plants started under glass, and sow seeds in the open ground in well-

manured hills, which should be about four feet apart. Keep off the striped bug by some of the means mentioned in the article on page 222.

Egg Plants.—These are warm weather fellows, and do but little until the soil has become well heated. Give a rich spit, hoe often, and each plant may yield six or eight large fruits, or only one.

Endive.—Sow for a late supply, and transplant, when large enough, to a foot apart each way.

Lettuce.—The India is the best sort for summer use.

Melons are to be treated as directed for cucumbers.

Onions.—Keep clear of weeds, and thin. It pays to sell onions long before they are ripe.

Parsnips.—Thin and hoe, and keep the bed clear of weeds until the leaves meet between the rows.

Peas in field culture simply have the earth drawn towards the vines to form a ridge. Put brush early to the tall-growing sorts, and plant succession crops.

Radishes, if relished so late in the season, may be sown at intervals of a week in unoccupied spots.

Rhubarb should not be pulled so freely when fruits come; let the plants recover. Cut the flower stalks as soon as they appear.

Ruta-Bagas, if sown in the garden, may be put in at the end of the month. Dust with plaster and ashes or lime as soon as the plants are up.

Salsify, a most excellent vegetable and often called "Oyster Plant," is grown in the same way as carrots. It is not too late to sow seed this month.

Spinach.—A succession crop may now be sown.

Squashes.—Treat the bush sorts as directed for cucumbers. Winter varieties must have room to run; give them plenty of manure; put in hills, 8 feet apart each way; keep off striped bugs as directed on page 223; hand-pick squash-bugs; keep the ground clean until the plants take possession of the soil, after which do not disturb them.

Sweet Potatoes.—At the North it is not too late to plant in well-manured ridges, as directed last month.

Tomatoes.—Set out, if not already done. In field culture the plants get no support, but in gardens it conduces to neatness and fruitfulness to have some kind of trellis. One cheap form for individual plants was given in last month's "Basket."

Weeds will need constant attention; they are easily managed when young, and are very stubborn when large. The free use of the rake or the pronged hoe will keep the garden in order, with much less trouble than a periodical spell of hoeing.

Flower Garden and Lawn.

The tender annuals sown the first of June will do quite as well, or better, than if put in the ground earlier. So with the majority of bedding plants, which are often seriously checked in their growth by chilly nights, and are a long while in recovering.

Green-House and other plants in pots are often used with good effect in decorating the grounds. They may be turned out of their pots into the border, or the pots may be plunged up to their rims. In the latter case, put some coal ashes under the pot, to prevent worms from finding their way in.

Oleanders, Oranges, Grape Myrtles, and such shrubs, may be turned out with benefit, provided they are taken up and potted early enough in the fall.

Fuchsias make good border plants if they have been grown sufficiently tall, and are placed where they will have shade in the hotter portions of the day.

Bulbs.—To have the best flowers of Hyacinths and Tulips, the bulbs should be taken up when the foliage begins to wither, dried, and kept until time to plant in fall; but in most gardens where special care is not given they are left out for several years, the bloom decreasing in size and beauty each year.

Annals.—Transplant or thin out the seedlings. Many kinds will do well if planted now. We gave a list of good sorts on page 187, last month.

Roses of the perpetual sorts should have the faded flowers removed, and their small branches shortened, to induce a new crop of flowers. Slugs must be treated to whale-oil or creosote soap. Train up some strong shoots of the climbing varieties to re-

place wood that will soon be old and to be removed.

Neatness is much promoted by using proper supports for plants. Let the sticks and tying material be kept out of sight. Remove all faded flowers.

Weeds of course must be kept down. Use the rake freely. The bayonet hoe and a narrow, long-toothed rake are the best implements for working among the plants in the flower borders.

Green and Hot-Houses.

The plants that are to come out will be outside by this time. Those that are left in should be properly shaded, watered, and cared for generally. Put out such plants as are suited to it, in the borders. Those that are to be retained in pots should be safe from being blown over, dried out, or being sunburned.... The earlier changes and repairs are made in the houses, the better.... Provide a good supply of potting soil. Well-rotted cow-manure and decomposed sods are the essential ingredients.

Cold Grapery.

While the vines are in flower, the temperature should range from 85° to 90° at mid-day, and sink very gradually at night; let watering be suspended during this period. Sudden changes interfere with the fertilization. When the blossoms are fully expanded, go through the house and give the bunches a gentle flirt with the finger, to facilitate the distribution of the pollen. One bunch is sufficient to leave to a shoot, and the shoot should be stopped at the third leaf beyond the bunch. When the berries are as large as peas, thin the bunches, removing one-half or more of the fruit on each. Tie up the shoots as the weight of the bunches increases.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared especially for the *American Agriculturist*, show at a glance the transactions for the month ending May 14, 1898, and for the corresponding month last year:

TRANSACTIONS AT THE NEW-YORK MARKETS.	
RECEIPTS.	Flour, Wheat, Corn, Rye, Barley, Oats.
26 days this m'th.	218,000 1,786,000 1,101,000 23,000 337,000 672,000
30 days last m'th.	183,000 3,027,000 915,000 66,500 31,000 71,000
SALES.	
Flour, Wheat, Corn, Rye, Barley, Oats.	
26 days this m'th.	325,000 1,967,000 1,838,000 133,000 141,000 1,361,000
30 days last m'th.	364,000 1,740,000 1,422,000 124,000 68,000 1,117,000
2. Comparison with same period at this time last year.	
RECEIPTS.	Flour, Wheat, Corn, Rye, Barley, Oats.
26 days 1898.	218,000 1,786,000 1,101,000 23,000 337,000 672,000
26 days 1897.	151,700 1,736,000 1,060,000 4,700 89,000 34,000
SALES.	
Flour, Wheat, Corn, Rye, Barley, Oats.	
26 days 1898.	325,000 1,967,000 1,838,000 133,000 141,000 1,361,000
26 days 1897.	284,000 1,897,000 1,369,000 41,000

Exports from New York, Jan. 1 to May 14:	
Flour, Wheat, Corn, Rye, Oats.	
1898.	219,392 1,708,715 2,949,014 123,063 36,499
1897.	150,471 35,439 2,941,111 172,282 96,780
1896.	331,659 109,477 2,100,516 171,826 676,629
1895.	138,093 215,946 145,776 111 24,915

Stock of grain in store at New York:	
Wheat, Corn, Rye, Barley, Oats, Malt.	
1898.	379,842 1,603,621 33,241 493,494 84,705
May 12.	894,129 1,554,706 134,535 301,683 2,946,732 54,153
Oct. 15.	167,803 867,664 7,300 32,733 890,892 57,977
Sept. 10.	129,532 1,154,592 50,876 135,247 34,508
Aug. 12.	391,714 983,729 28,885 12,476 20,349 48,652
Mar. 10.	175,132 1,179,232 43,342 46,614 1,794,422 8,702
Jan. 11.	507,679 1,705,389 182,111 95,032 1,134,191 65,287
Jan. 11.	1,645,418 1,484,533 189,320 161,313 2,579,526 69,593
1897.	
Dec. 11.	1,804,215 1,653,094 209,500 329,815 8,199,562 83,445
Nov. 12.	941,129 1,554,706 134,535 301,683 2,946,732 54,153
Oct. 15.	167,803 867,664 7,300 32,733 890,892 57,977
Sept. 10.	129,532 1,154,592 50,876 135,247 34,508
Aug. 12.	391,714 983,729 28,885 12,476 20,349 48,652
July 15.	245,599 169,180 66,886 21,360 296,763 34,508
June 14.	558,229 217,916 117,257 69,643 379,851 16,391
May 15.	712,290 229,021 196,804 145,706 688,094 16,491

Gold has been firmer in price, but not active, since our last. The latest quotation was 129.4. A more animated business has been reported in breadstuffs, the receipts and sales of which have been on a much more extensive scale, though generally at reduced figures. The export demand has been quite brisk, chiefly for spring wheat, the offerings of which have been largely increased, since the resumption of canal navigation. Within the past week, the purchases of No. 2, Spring, for shipment to British ports, have been unusually heavy, but buyers have had any existing advantage. Toward the close, Flour was depressed in price, on a light call for all grades; while Wheat, Corn, Rye, and Oats, wound up more steadily, on a reviving inquiry.... Provisions have been in less demand, closing generally with a downward tendency in values, under some pressure to realize, chiefly on hog products.... Cotton has been less active and lower....

Wool has been moderately sought after, mainly by manufacturers, who have been paying rather stronger prices for low and medium grades.... Seeds have been quite dull.... Hay and Tobacco have attracted more attention at partially advanced prices.... Hops have been in slack request and decidedly cheaper.

CURRENT WHOLESALE PRICES.

	April 14.	May 14.
PRICE OF GOLD.....	138 1/2	139 1/2
FLOUR—Super to Extra State.....	9 00 @ 11 25	8 75 @ 10 50
Super to Extra Southern.....	9 75 @ 15 00	10 10 @ 15 50
Extra Western.....	9 80 @ 15 50	9 25 @ 16 15
Extra Genesee.....	10 75 @ 14 00	10 75 @ 14 00
Superfine Western.....	9 00 @ 9 50	8 50 @ 9 25
RYE FLOUR.....	7 00 @ 9 60	8 00 @ 9 50
CORNY MEAL.....	6 00 @ 7 25	6 00 @ 7 25
WHEAT—All kinds of White.....	2 90 @ 3 37	2 80 @ 3 30
All kinds of Red and Amber.....	2 50 @ 2 90	2 20 @ 2 85 1/2
CORNY Yellow.....	1 10 @ 1 27	1 25 @ 1 35
Mixed.....	1 20 @ 1 25	1 17 @ 1 18 1/2
OATS—Western.....	80 1/2 @ 86 1/2	87 1/2 @ 88
State.....	Nominal.	Nominal.
RYE.....	1 87 @ 1 94	2 05 @ 2 10
Barley.....	1 10 @ 1 35	2 00 @ 2 10
Hay—Bale \$100 b.....	75 @ 1 30	80 @ 1 50
Loose.....	80 @ 1 40	1 00 @ 1 50
Feed Leaf.....	60 @ 80	60 @ 80
COTTON—Middlings.....	31 @ 32 1/2	29 1/2 @ 31
Hops—Crop of 1897.....	10 @ 55	10 @ 50
RYE—Live Genesee.....	75 @ 90	75 @ 90
SEED—Clover.....	9 1/2 @ 10 1/2	10 @ 11
Timothy.....	2 60 @ 2 50	2 20 @ 2 50
Timothy.....	2 60 @ 2 80	2 65 @ 2 75
STEAR—Brown.....	10 @ 13 1/2	10 1/2 @ 14
Stear.....	7 1/2 @ 25	35 @ 45
COFFEE—Rio (Gold price).....	13 1/2 @ 18 1/2	9 @ 13
Tobacco, Kentucky, &c.....	8 @ 24	8 @ 20
WOOL—Domestic Fleeced.....	40 @ 60	40 @ 60
Domestic, pulled.....	28 @ 47	28 @ 40
Wool.....	12 @ 25	12 @ 25
TALLOW.....	10 @ 12 1/2	11 1/2 @ 12 1/2
OLIVE OIL.....	48 @ 60	36 @ 52
RYE—Live Genesee.....	20 @ 27 1/2	27 1/2 @ 28 1/2
RYE—Live Genesee.....	22 @ 22 1/2	23 @ 24
RYE—Live Genesee.....	15 @ 23 1/2	15 @ 23 1/2
RYE—Live Genesee.....	18 @ 24 1/2	18 @ 24 1/2
RYE—Live Genesee.....	20 @ 25 1/2	20 @ 25 1/2
RYE—Live Genesee.....	22 @ 26 1/2	22 @ 26 1/2
RYE—Live Genesee.....	24 @ 27 1/2	24 @ 27 1/2
RYE—Live Genesee.....	26 @ 28 1/2	26 @ 28 1/2
RYE—Live Genesee.....	28 @ 29 1/2	28 @ 29 1/2
RYE—Live Genesee.....	30 @ 30 1/2	30 @ 30 1/2
RYE—Live Genesee.....	32 @ 31 1/2	32 @ 31 1/2
RYE—Live Genesee.....	34 @ 32 1/2	34 @ 32 1/2
RYE—Live Genesee.....	36 @ 33 1/2	36 @ 33 1/2
RYE—Live Genesee.....	38 @ 34 1/2	38 @ 34 1/2
RYE—Live Genesee.....	40 @ 35 1/2	40 @ 35 1/2
RYE—Live Genesee.....	42 @ 36 1/2	42 @ 36 1/2
RYE—Live Genesee.....	44 @ 37 1/2	44 @ 37 1/2
RYE—Live Genesee.....	46 @ 38 1/2	46 @ 38 1/2
RYE—Live Genesee.....	48 @ 39 1/2	48 @ 39 1/2
RYE—Live Genesee.....	50 @ 40 1/2	50 @ 40 1/2
RYE—Live Genesee.....	52 @ 41 1/2	52 @ 41 1/2
RYE—Live Genesee.....	54 @ 42 1/2	54 @ 42 1/2
RYE—Live Genesee.....	56 @ 43 1/2	56 @ 43 1/2
RYE—Live Genesee.....	58 @ 44 1/2	58 @ 44 1/2
RYE—Live Genesee.....	60 @ 45 1/2	60 @ 45 1/2
RYE—Live Genesee.....	62 @ 46 1/2	62 @ 46 1/2
RYE—Live Genesee.....	64 @ 47 1/2	64 @ 47 1/2
RYE—Live Genesee.....	66 @ 48 1/2	66 @ 48 1/2
RYE—Live Genesee.....	68 @ 49 1/2	68 @ 49 1/2
RYE—Live Genesee.....	70 @ 50 1/2	70 @ 50 1/2
RYE—Live Genesee.....	72 @ 51 1/2	72 @ 51 1/2
RYE—Live Genesee.....	74 @ 52 1/2	74 @ 52 1/2
RYE—Live Genesee.....	76 @ 53 1/2	76 @ 53 1/2
RYE—Live Genesee.....	78 @ 54 1/2	78 @ 54 1/2
RYE—Live Genesee.....	80 @ 55 1/2	80 @ 55 1/2
RYE—Live Genesee.....	82 @ 56 1/2	82 @ 56 1/2
RYE—Live Genesee.....	84 @ 57 1/2	84 @ 57 1/2
RYE—Live Genesee.....	86 @ 58 1/2	86 @ 58 1/2
RYE—Live Genesee.....	88 @ 59 1/2	88 @ 59 1/2
RYE—Live Genesee.....	90 @ 60 1/2	90 @ 60 1/2
RYE—Live Genesee.....	92 @ 61 1/2	92 @ 61 1/2
RYE—Live Genesee.....	94 @ 62 1/2	94 @ 62 1/2
RYE—Live Genesee.....	96 @ 63 1/2	96 @ 63 1/2
RYE—Live Genesee.....	98 @ 64 1/2	98 @ 64 1/2
RYE—Live Genesee.....	100 @ 65 1/2	100 @ 65 1/2

New York Live Stock Markets.

WEEK ENDING. Bees, Cows, Calves, Sheep, Steers, Pigs.

April 20th.....	5,381	131	2,321	16,445	13,623	28,101
April 27th.....	5,560	172	2,590	19,750	21,038	49,419
May 4th.....	5,519	184	2,521	19,783	21,028	49,419
May 11th.....	5,332	92	2,554	12,067	24,003	43,748

Total in four Weeks.....21,992 45,106 62,045 72,803 167,769

do. for previous 4 Weeks 22,938 61,337 82,337 68,206 69,479 187,497

Bees, Cows, Calves, Sheep, Steers, Pigs.

Average per Week.....5,473 116 2,624 15,511 18,394

do. do. last Week.....5,381 131 2,321 16,445 13,623 28,101

do. do. prev. Week.....5,560 172 2,590 19,750 21,038 49,419

Average per Week.....5,473 116 2,624 15,511 18,394

do. do. 1897.....5,473 116 2,624 15,511 18,394

do. do. 1895.....5,253 118 1,500 16,091 11,023

do. do. 1894.....5,519 184 2,521 19,783 21,028 49,419

do. do. 1893.....5,150 129 604 9,941 21,023

Total in 1897.....26,832 8,569 69,941 117,154 110,643

Total in 1896.....27,074 6,617 77,991 98,338 77,573 191

Total in 1895.....30,609 7,663 75,621 78,842 69,270

Total in 1894.....30,609 7,663 75,621 78,842 69,270

Total in 1893.....30,609 7,663 75,621 78,842 69,270

Total in 1892.....30,609 7,663 75,621 78,842 69,270

Total in 1891.....30,609 7,663 75,621 78,842 69,270

Total in 1890.....30,609 7,663 75,621 78,842 69,270

Total in 1889.....30,609 7,663 75,621 78,842 69,270

Total in 1888.....30,609 7,663 75,621 78,842 69,270

Total in 1887.....30,609 7,663 75,621 78,842 69,270

Total in 1886.....30,609 7,663 75,621 78,842 69,270

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Total in 1879.....30,609 7,663 75,621 78,842 69,270

Total in 1878.....30,609 7,663 75,621 78,842 69,270

Total in 1877.....30,609 7,663 75,621 78,842 69,270

Total in 1876.....30,609 7,663 75,621 78,842 69,270

Total in 1875.....30,609 7,663 75,621 78,842 69,270

Total in 1874.....30,609 7,663 75,621 78,842 69,270

Total in 1873.....30,609 7,663 75,621 78,842 69,270

Total in 1872.....30,609 7,663 75,621 78,842 69,270

Total in 1871.....30,609 7,663 75,621 78,842 69,270

Total in 1870.....30,609 7,663 75,621 78,842 69,270

Total in 1869.....30,609 7,663 75,621 78,842 69,270

Total in 1868.....30,609 7,663 75,621 78,842 69,270

Total in 1867.....30,609 7,663 75,621 78,842 69,270

Total in 1866.....30,609 7,663 75,621 78,842 69,270

Total in 1865.....30,609 7,663 75,621 78,842 69,270

Total in 1864.....30,609 7,663 75,621 78,842 69,270

Total in 1863.....30,609 7,663 75,621 78,842 69,270

they also diminish the consumption. These supplies of animal food, and the early vegetables now just finding their way into market, reduce the demand for beef, and the butchers find that the prices of last winter cannot be maintained; consequently, beef has fallen at least 1c. per pound since our last report.... **Milk Cows.**—The supply has been light, with a moderate call from milkmen and others, and trade is dull. Cows are often purchased on account of their good looks rather than their milking qualities, and some have sold as high as \$120 to \$150 each. Such prices are generally obtained from those who had a showy animal. Equally good milkers may be had for \$80 to \$90. Poor cows sell for \$40 to \$50 each.... **Veal Calves.**—The supply has been very large, and prices much below last month. A great many dressed calves continue to come in, and some from a great distance are in such poor order that they sell very cheap, affecting very much the sale of live animals. Few live calves bring more than 11c. live weight, while many really fine ones sell for 10c., and ordinary ones as low as 6c. to 8c. Owing to the great scarcity of sheep for the past two weeks, the market for veal has been more firm.... **Sheep and Lambs.**—Receipts have been less every week for the past month, and we have a falling off in numbers of 24,000, which is a very large decrease. Full one-half the sheep coming in now to market have been sheared, and unshorn ones are less and less every arrival. We quote sheared at 9 1/2 @ 10c. for good, 8 1/2 @ 9c. for medium, while common ones, poor and small, sell at low 7c. Unshorn extras bring 9 1/2 @ 11c. good to medium, and common from 6 1/2 @ 9c. Lambs are more plenty, and worth 15 @ 18c. per pound, live weight, or 7 1/2 @ 8 1/2 c. each. The market is very brisk, and buyers watch for the arrival of trains very closely, not unfrequently purchasing before their arrival....

Swine.—Notwithstanding there has been a steady increase in the number of hogs every week since our last report, prices have remained about the same. A slight decline at the close of our report is manifest. The heavy increase of 10,000 head Monday, May 11th, rather "glitched" the market, and prices fell about 1/2 c. per pound. The prevailing rates now are 9 1/2 @ 10c. Some very prime lots sold at 10 1/2 c., and rough ones at 9 1/2 c.

What Railroads Do for Farmers.

—To haul 40 bushels of corn 50 miles on a wagon would cost at least \$12 for team, driver, and expenses. A railroad would transport it for \$4 at most. Allowing an average of 40 bushels per acre, the crop would be worth \$8 more per acre, or 8 per cent on \$100. As the relative advantage is about the same for other crops, it is clear that a railroad passing through a town would add \$100 per acre to the value of the farms. A town 10 miles square contains 64,000 acres. An increase of \$100 per acre is equal to \$6,400,000, or enough to build 300 miles of railroad, even if it cost \$32,000 per mile. But 200 miles of road would extend through twenty towns

Last Call.

JUNE. JUNE.

JUNE.

JUNE. JUNE.

Two Halves equal One Whole One.

Our offer of general premiums for 1868 must close on the last day of June, except from localities too distant to forward names in time to arrive by that day.—By special request, we offer to receive subscriptions for the remaining half of this year, and count two such half-year subscribers as one name in any premium club list—though every new subscriber ought to have all the numbers of this year. We have subscribers at most of the 30,000 Post-Offices in the United States and the Dominion, but we have sent premiums to only about 6,000 of them as yet, though there is hardly a Post-office where there are not persons enough to make up a premium club, and persons, too, who would gladly take the *Agriculturist*, if they only knew its value and cheapness. (The first five numbers of this year, for example, contain 204 large pages, over 180 engravings, and a very large amount of useful, practical reading matter for the Household, the Garden, and the Farm. The next seven numbers will be equally valuable or better, and yet the *Agriculturist* for the whole year is supplied for only \$1.50, or about the cost of the white paper it is printed on. The fact that so large a number of persons have obtained premiums, is strong proof that *others can do the same thing* at other Post-Offices. Indeed, at some larger offices men and women have obtained subscribers enough to get several premiums. Single individuals have this year each received from \$500 to \$1700 worth of premiums. One lady alone has obtained two \$650 Pianos and sold them, besides getting a lot of other premiums. Now there are over

24,000 Post-Offices

still left, at most of which any enterprising person may get one or more valuable premium articles, (see list of them in the next column,) and do it during this month of June. It will be seen by the table, that only 10 or 15 subscribers are required for several of the good articles offered. More than this number have been obtained at a multitude of the smallest post-offices in the sparsely settled regions of the Far West, and in the northern regions of New England, New York, and almost all over British America. Single post-offices in Nova Scotia take from 100 to 200 copies each. Our "Explanation" in April showed *how* and *why* we can give these large premiums, and we now renew the invitation to all our readers, to make the effort this month to secure a premium article. Every copy of the paper introduced into a neighborhood will awaken thought and stimulate improvement, guard the people against humbugs, and be useful in many ways. Persons have told us that improvements, set a going by this journal, have resulted in almost doubling the value of real estate—thus adding scores of thousands of dollars to the real wealth of a single locality. It is indeed very natural that this should be the case.

But aside from the good done to others by introducing a journal of this character, the premiums appeal to one's own direct, immediate, personal interest. The premium articles are all very good and valuable, and a few hours of canvassing will secure one of them without cost. Try it with a will and determination to succeed, and in nine cases out of ten you will be successful. Take a copy of the paper,

exhibit it among neighbors and friends, in your own neighborhood and elsewhere (for premium clubs need not be all at one post-office), show what the paper is, what it is worth, how cheap it is, and in a brief time the desired number of subscribers can be gathered, and the premium secured. A full description of the premiums on a separate sheet will be sent free to any one desiring it. Any Specimen numbers, cards and show bills needed, will be supplied free. A multitude of persons have during May completed lists already begun, and have begun and made up new lists. June is just as favorable a season for thousands of others to do the same. We advise YOU to TRY IT.

Old and new subscribers can in premium lists. As fast as subscriptions are obtained, send them along, that the subscribers may begin to receive the paper; and when all the names that can be obtained are forwarded, select the premium, and it will be promptly furnished. To save mistakes and keeping accounts, send with each list of names, the exact subscription money.

Remit Post-Office money orders, or drafts or checks on N. Y. City, if these cannot be had, register money letters.

Every name designed for a premium list must be so marked when sent in. (We cannot count others.)

Table of Premiums and Terms, For Volume 27—(1868).

Open to all—No Competition.

No.	Names of Premium Articles.	Price of Premiums.	Number of Subscribers required at \$1.50.
7	Sewing Machine (Grover & Baker).	\$55.00	60
8	Sewing Machine (Singer's Tailoring).	\$50.00	60
9	Sewing Machine (Singer's Tailoring).	\$50.00	60
10	Sewing Machine (Singer's Tailoring).	\$50.00	60
11	Sewing Machine (Singer's Tailoring).	\$50.00	60
12	Sewing Machine (Singer's Tailoring).	\$50.00	60
13	Sewing Machine (Singer's Tailoring).	\$50.00	60
14	Sewing Machine (Singer's Tailoring).	\$50.00	60
15	Sewing Machine (Singer's Tailoring).	\$50.00	60
16	Tea Set (Hart's best Silver Plated).	\$50.00	60
17	Tea Set (Hart's best Silver Plated).	\$50.00	60
18	Tea Set (Hart's best Silver Plated).	\$50.00	60
19	Tea Set (Hart's best Silver Plated).	\$50.00	60
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85	Tea Set (Hart's best Silver Plated).	\$50.00	60
86	Tea Set (Hart's best Silver Plated).	\$50.00	60

Every article on our list is the best of its kind, and in all respects, what is claimed for it. No charge is made for packing or boxing any article in our Premium List. The Forty-four Premiums, viz., Nos. 1, 2, 6, and from 36 to 39, and from 50 to 56 inclusive, will each be delivered FREE of all charges, by mail or express, (at the Post-Office or express office nearest

recipient), to any place in the United States or Territories, excepting those reached only by the Overland Mail.—The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance that may be specified.

Nos. 50 to 60—Volumes of the *American Agriculturist* (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-sixth Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are put up in clean numbers, with the Index to each volume.—They are profusely illustrated, the Engravings used in them having alone cost about Twenty Thousand Dollars! Those obtaining premiums for less than eleven volumes, can select any volumes desired, from XVI to XXVI, inclusive. For ordinary use, the sets of numbers unbound will answer quite well.—Many hundreds of these volumes are taken every year as premiums. In Nos. 61 to 71 we offer the bound volumes also.

Nos. 74 to 85—GOOD LIBRARIES.—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any one of the premiums 74 to 85, may select any books desired from the list below, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post-Office, or Express office, as we may find it most convenient to send them.

No. 86—General Book Premium.—Any one not desiring the specific Book premiums, 74 to 85, on sending any number of names above 25, may select Books from the list below, to the amount of 10 cents for each subscriber sent at \$1; or to the amount of 30 cents for each name sent in the General Club price of \$1.50 at each, or to the amount of 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

BOOKS FOR FARMERS AND OTHERS.

[For sale at the office of the *Agriculturist*, or they will be forwarded by mail, post-paid, on receipt of price. All these are included in our Premiums, Nos. 74 to 86, above.]

Allen's (L. F.) Rural Architecture	.....	\$1.50
Allen's (R. L.) American Farm Book	.....	1.50
Blen's Diseases of Domestic Animals	.....	1.00
Am. Agricultural Annual, 1867 & 1868, each, pa. 50c.	.....	.75
Am. Horticultural Annual, 1867 & 1868, each, pa. 50c.	.....	.75
American Bird Fancy	.....	1.00
American Poultry—Appl. By Dr. John A. Warder	.....	3.00
American Rose Culturist	.....	3.00
American Weed and Insect	.....	1.00
Architecture, by Cummings & Miller	.....	10.00
Architecture, Modern Am., by Cummings & Miller	.....	10.00
Birds & Fruit Garden	.....	1.00
Bement's Rabbit Fancier	.....	30.00
Cobbett's Method of Cultivating	.....	3.00
Book of Evergreens (J. Hoopes)	.....	3.00
Boussingault's Rural Economy	.....	1.50
Butcher's New Book	.....	1.50
Baist's Flower Garden Directory	.....	1.50
Baist's Family Kitchen Gardener	.....	1.50
Baist's Grape Grower & Cultivator	.....	1.50
Cobbett's American Gardener	.....	1.50
Cole's (S. W.) American Fruit Book	.....	75.00
Cole's Vermicompost	.....	5.00
Copeland's Country Life	.....	8vo. cloth.
Cult. Culture (J. H. Packer)	.....	1.50
Dadd's (Geo. H.) Modern Horse Doctor	.....	1.50
Dadd's American Cattle Doctor	.....	1.50
Dana's Nuck Manual	.....	1.50
Darwin's Animals & Plants under Domestication 2 vols.	.....	6.00
Dog and Gun (Hoopes)	.....	cloth.
Downing's Landscape Gardening (new Edition)	.....	6.00
Draught for Profit and Health by G. E. Waring, Jr.	.....	1.50
Eastwood on Cranberry	.....	1.50
Eastwood's Western Farm	.....	1.50
Flax Culture	.....	1.50
Flax Culture (Thomas W. Moore)	.....	1.50
French's Farm Drainage	.....	1.50
Fuller's Grape Cultivator, (Revised Edition)	.....	1.50
Fuller's Strawberry Culture	.....	1.50
Fuller's Small Fruit Culturist	.....	1.50
Gardening for Profit, by Peter Henderson	.....	1.50
Gordon on Squash	.....	paper.
Guenon on Milk Cows	.....	75.00
Harris's Insects Injurious to the Cultivator	.....	75.00
Hart's Rural Annual, Bond, 8 Nos., in 2 Vols. Each	.....	1.75
Herbert's Hints to Horsekeepers	.....	1.75
Hop Culture	.....	1.50
Johnston's Agricultural Chemistry	.....	1.75
Johnston's Elements of Agricultural Chemistry	.....	1.50
Leach's How to Build a Hot-House	.....	1.50
Miles on the Horse's Foot	.....	1.50
Mohr on the Grape Vine	.....	1.50
My Vineyard at Lambeth	.....	1.25
Norton's Scientific Agriculture	.....	1.50
On Culture	.....	1.50
Our Farm of Four Acres (bound) 6c.	.....	paper.
Pardee on Strawberry Culture	.....	1.50
Peck and Its Use, by Prof. S. W. Johnson	.....	1.50
Pedder's Land Measurer	.....	1.50
Quincy's Mysteries of Bee Keeping (N.W.)	.....	1.50
Riddison on the Horse	.....	1.50
Standard's Flee Wool Sheep Husbandry	.....	1.50
Rivers' Miniature Fruit Garden	.....	1.50
Saunders' Domestic Poultry (new), paper, 40c. bound	.....	1.50
Schnee's Garden Text Book	.....	1.00
Stewart's (John) Stable Book	.....	1.00
Thompson's Food of Animals	.....	1.00
Thoburn Culture	.....	1.50
Warder's Hedges and Evergreens	.....	1.50
Yonatt and Spooner on the Horse	.....	1.50
Yonatt and Martin on Cattle	1.50
Yonatt on the Hog	1.50
Yonatt on Sheep	1.50

AMERICAN AGRICULTURIST.

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DID YOU SEE IT?

Did you see the offer made by us last month, to send *without charge* (and post-paid at that) one of our beautiful and valuable *Annals*, for every subscriber to the *Agriculturist* you would send us during May? (We now renew and continue the offer for the month of June.) Those *Annals* are not only very beautiful books, but they are very *valuable*—they are full of good information, are splendidly illustrated, and ought to be in every family in country, city, or village. They contain many dollars' worth of information, and were prepared at large expense, yet they are sold for only 50 cents each, (postage included.) They are:

- No. 1 *Agricultural Annual*, for 1867.
- No. 2 *Agricultural Annual*, for 1868.
- No. 1 *Horticultural Annual*, for 1867.
- No. 2 *Horticultural Annual*, for 1868.

These are universally admitted to be the cheapest volumes issued. They are original, the matter and engravings being all prepared exclusively for these volumes by a large number of first class, practical writers. As these books are a permanent Annual Institution, we want everybody to have a copy, for all who get them this year will be sure to want the numbers for 1869 and thereafter. We therefore invite everybody who has not done so already, to send only 50 cents, and secure a post-paid copy of either the *Agricultural Annual* No. 2, or the *Horticultural Annual* No. 2, or send \$1 and get both of these volumes, or \$2.00 for the four.

To any one sending during the month of June a subscriber to the *American Agriculturist* for 1868 at the regular price (\$1.50), we will present a copy of either of the above-named *Annals* that may be desired, and we will send it post-paid to any point in the United States or Territories, (except to those places reached only by the Overland Mail, as that mail will not carry books unless prepaid letter postage),...A few minutes' work or talking will enable any person to secure a subscriber to the *Agriculturist* (as valuable as we are now making the paper), and then the *Annual* will be obtained free.

N. B.—One *Annual* is offered for each subscriber sent at \$1.50. The sender can choose any one of the four *Annals*. One, two, three, four, or more subscribers will secure an equal number of *Annals*, of any issue desired....N. B.—These premium *Annals* are special, and are not included in the general premiums which are separate, but are continued—for this month only.



containing a great variety of *Items*, including many good *Hints* and *Suggestions* which we throw into smaller type and condensed form, for want of space elsewhere.

How to Remit:—Checks on New-York Banks or Bankers are best for large sums: made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us *without any loss*.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. *Observe*, the *Registry Fee*, as well as postage, *must be paid in stamps* at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. *Buy and affix the stamps both for postage and registry, put in the money and seal the letter in the presence of the postmaster, and take his receipt for it.* Letters sent in this way to us are at our risk.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, *three cents*, each quarter, or *twelve cents*, yearly, must be pre-paid at the Post-office where the paper is received.

Plow Trial of the N. E. Ag'l Society.—An important trial of plows was conducted at Amherst, on the grounds of the Agricultural College during four days last month, by the New England Agricultural Society. There were but few entries, considering the importance of the trial. However, several of the most popular plows of the East were tried and passed upon. The Judges gratified the public by reporting the awards at once. It is hardly fair for us to give them without the accompanying remarks of the committee, but want of space prevents our giving them in full. In Class I—Stiff Soil Plows—there were 7 entries, and while the Ames' Plow Co. and the Collins' Plows were highly commended, the Morse Iron-beam Plow took the medal and C. W. Sykes' Victory 1 the diploma. In Class II—Stiff Soil Subble Plows—there were 5 entries. Collins' Co.'s C-3, took the medal, Belcher & Taylor's No. 5½ the diploma, and Ames' Co.'s 24, a diploma. In Class III—Light Soil Soil Plows—medal to Ames' Co.'s Telegraph 3; diploma to Collins' Co.'s E-12; and a diploma to Mende's Conical. In Class IV—Deep Tillers—5 entries, Ames' Co.'s 77, medal; Collins' Deep Tiller, diploma. Class V—entry—medal to the Ames' Co.'s Double Plow. In Class VII—3 entries—Ames' Plow Co.'s 5½ Improved took the medal, and Collins' Co.'s B-12, received the diploma. In Class VIII—3 entries—the Ames' Co.'s Steel, Side-hill Single Swivel Plow, A-2, received the medal, C. W. Sykes' Victory Plow, the diploma.

The Death of Dr. Dana.—Dr. Samuel L. Dana died at Lowell, Mass., in March last, at the age of 73. Doctor D. was a practical chemist, but long an honored friend of agriculture, and is best known to agriculturists by his *Muck Manual* and *Essay on Manures*.

An Omission.—It should have been stated under the spirited engraving on page 230, that it was drawn and engraved from a painting by Henriette Bonner.

A Large Price for Plants.—At a recent sale in London, twelve new seedling *Colosseus* plants so much admired for their ornamental foliage, brought the sum of £293, 3s, or over \$1,700 in gold. They were taken up by the London florists, and as they propagate rapidly, we shall soon see them over here.

Bees in June.—By Wm. W. Cary. The profits of the Apiary depend much upon managing this month. Put on surplus boxes *early*. Sick guide comb in them; this will induce the bees to begin work sooner. If but two sides are of glass, put the guides parallel with the glass—it looks better when finished. An inviting appearance in any market article which may be classed among luxuries greatly helps the sale. All swarms are aided by feeding them, for a few days after hiving, especially if the weather proves unfavorable. By a little well-timed attention, either by feeding, supplying with empty worker comb, or giving maturing brood, according to circumstances, swarms may be equalized so

that the autumn will find them almost on a par for passing the winter; and this may be done in much less time than the novice would suppose. The frame honey-box, or "super," is growing in favor with those who use movable comb hives. The frames should be ½ or ¼ the size of the hive frames so that they may be conveniently used in case of necessity for winter or spring feeding. All partially filled frames, should be kept for next season's use, and given to the strongest stocks—they will be filled and sealed over before the bees, under other circumstances, would have got fairly at work in the boxes. Such frames should be put further apart than those in the body of the hive, as store combs are built thicker than brood combs, and each frame should have a guide comb for starting. These frame boxes have no bottoms, but movable tops.

Humbugs, 2d Edition.—After the following page was "made up," we learn that A. A. Kelly has gone to Buffalo. Some people at Buffalo having been swindled by Clark, Webster & Co., sent on a detective here to look into the matter. The result was, the head of the concern was indicted by the Grand Jury of Erie Co., arrested in New York, and taken to Buffalo to answer. The head of Clark, Webster & Co., turned out to be no other than A. A. Kelly, of Kelly's Weekly.

Beautiful Pictures.—We have frequently said that the illustrations alone in the *American Agriculturist* are worth far more than the price of the paper. This is literally so, because they are truthful representations of real subjects in a high style of art, and are both pleasing and instructive. People generally ought to be more cheerful and happy than they are, and pictures help to make them so. Have pictures in your houses—the best that can be afforded—and enjoy them. Our attention was called to this subject by some beautiful chromos from L. Prang & Co., Boston. We wish every house in the land could have some of these beautiful gems of art in it.

N. J. State Agricultural Society.—We go to press too early to report the Sales Fair held on the 30th to 22d of May. There will be a Strawberry and Floral Exhibition some time during the present month, to be announced; a trial of Mowers and Reapers in July, and the regular Annual Fair in September. The exhibition grounds and buildings of the society are midway between the cities of Newark and Elizabeth, and are very convenient and beautiful.

Sundry Humbugs.—S. G. Sheaffer & Co., Hanover, Pa., do not like our notice of their proceedings, and are foolish enough to tell people on their envelopes that we have "seen proper to denounce" them. We class them as *humbugs*, because they have what is to all intents and purposes a lottery, or game of chance. They say in their circular as follows: "We take a thousand and one hundred and seventy dollars, which we put into one thousand envelopes; the money is divided into 320 parts: The largest single amount in one envelope, \$25.00; 2 envelopes of \$5; 10 of \$2.50; 20 of 50 cts.; 40 of 25 cts.; and 200 of 10 cts. Every thousand must be sold before a fresh one is touched, and persons are certain of getting just so much money in every thousand, and as likely to get the best package last as first." Here is proof that would hold in any decent court, that these people are disposing of money by "lot," and we place their project in the same list with other "gift distributions."...Will everybody please stop sending us Hallett, Moore & Co.'s lottery tickets. "Sandy River Petroleum Stock" won't pay the postage. The "Geo. Washington Toilet Watch Manufacturing Co." are not to be found at the number given, and we hope nobody will be foolish enough to invest money in such stock. The scheme proposes 200,000 shares of stock at \$2.50 each; these are offered for sale, and when the stock is all sold they will send to the holder of each share a "gold watch," and give him the chance of drawing \$30,000 in greenbacks. These fellows have the impudence to say, "This is no lottery!" We speak of this money in detail to show one prominent point in all "lottery" schemes. They induce people to send \$1, \$2 or \$3, as the case may be, as an investment, for which they are sure to get the value, and more, in "Gold Jewelry," and besides this have a chance of getting still more in money or valuable goods when the "drawing comes off." The "golded trash," for it is not gold, may possibly in half the instances be obtained, but the "drawing" on which so many hopes are placed never comes. After a few weeks of waiting, the expectant victim writes us to know if we can help him out. If any of these persons had considered more carefully the papers sent, their own judgment or that of their neighbors would have shown that it was impossible for the senders of the circulars to do as they propose; the whole thing bears the stamp of a "swindle," on its very face. Beware of all lottery Mining schemes. The Mount Vesta Gold & Silver Mining Co., J. P. M. Kennedy, President, is not to be found at the number given....AF-

ter many trials we have succeeded at last in fuding the Excelsior Sewing Machine; it is not a machine that we would buy at any price. Steer clear of R. H. Homan & Co., Astoria, N. Y., and his Jewelry orders....A. A. Kelly & Co.'s matters have assumed a new phase. Kelly & Co. have long imposed upon the public by scattering prize tickets broadcast with their Journal, a paper issued in imitation of Harper's Weekly. These tickets, each and all, appear to draw "prizes" of \$100 to \$300, but 5 per cent cash advance is required to secure the prizes. When this payment is made, the victim gets a certificate of \$100 or \$300 shares in an oil company. We estimate the value of these certificates of shares at about one-twentieth part of a cent—as waste paper! Now we have circulars from Damon, Lee & Co., who claim to have got hold of \$163,000 worth of the genuine prizes of Kelly & Co., such as diamonds, pianos, etc., of which they propose to make a "distribution" to ticket-holders. On the other hand, Kelly & Co. assert that some one has fraudulently obtained the names of some of their ticket-holders, and caution people to send no money to any except themselves. Damon, Lee & Co. say that Kelly & Co. send out nearly all "stock," and that they have got the valuable presents. There is a large cat in that meat tub. There may be one actor under two names, or there really may be two concerns; if the latter, honest people will not get their dues, even if "rogues fall out." None but very foolish people will have anything to do with such concerns as Damon, Lee & Co., or Kelly & Co.

Send Your Name.—The English journals have over their "answers to correspondents," the standing notice that anonymous communications will be disregarded. We do not wish to make this rule, as it is often the case that a very excellent suggestion comes to us from those who have a dislike to appear in print. Please understand that we never print a name when there is any indication that the writer would prefer to have it withheld. Put the initials at the end of a communication, or any assumed name, but below give us the real address. We ask this for the reason that it often occurs that we wish to correspond with the writer. At other times it happens that the question is not of general interest, and we would rather reply by letter than in this paper. A case has recently happened in which it would have been of considerable benefit to the correspondent if we had known his full address.

Answering Letters.—When one writes us for information upon some subject proper within our province, it is a pleasure to answer, if we can find time. While we do not acknowledge ourselves under an obligation to answer—as some seem to assume—we take the same pleasure in helping another engaged in the same pursuits that any obliging person always feels. Now, a word with our correspondents. We have no information to sell; so do not enclose any sum for "our trouble." It only puts us in the "trouble" of returning the money. Put in the exact postage and no more. When we write letters for fees we will publish a tariff of charges. Do not ask us where to get seeds, plants, or machines, unless it is some unusual or out-of-the-way thing. All the large dealers keep everything in their line, or will get it. Do not ask our opinion about advertising Doctors. We have but one answer concerning the whole crew—"We do not know any thing of them." The place to look for information about these fellows is in our Humbug article. We repeat with emphasis, that any one calling himself a "doctor," who warrants a cure, who advertises a medicine, or who publishes certificates, is a quack, and is to be avoided. Don't ask us if such and such are not exceptions, they are all in the same boat. In writing, please ask the question directly, without obliging us to read half a page of apology—and do use black ink. Many letters that would have been answered have been delayed by the absence of the editor in whose department they come. This must be taken as an apology to those who feel that they have been neglected.

Southern Journals.—It is very pleasing to notice that in almost every Southern State some enterprising man starts an agricultural journal. Of some of these papers we have spoken in terms of commendation. Other Southern agricultural papers have come to us lately, and, without giving at present their titles, we have a word to say to the editors of some of these sheets, as most of them seem to be new in journalizing, and we hope that they will take it kindly if we give them a bit of advice. It is not proper for a journal which professes to be agricultural to discuss political topics. Other papers can present and discuss all subjects that have a political aspect. The text of an agricultural paper should be, "The soil, and what we can get from it." Then, again, some of our new exchanges, while they have very good editorials, use many excellent selections. This is a very good thing to do, and we would mildly suggest to at least two of the new papers, that courtesy, not to say justice, would

demand that they place "American Agriculturist," after a good share of their articles. We wish others of our friends, both North and South, who find our articles of sufficient importance to quote, would take notice that the title of this paper is not "Ex," nor yet is it "Exchange," but that it is the *American Agriculturist*. Please notice that each issue of our paper is copyrighted, but not to prevent free quotation by any one who may see fit to use our articles. We allude to this in no threatening spirit, but would simply warn certain parties, whom, considering their inexperience, we do not choose to call by name, that, while we are quite willing that our articles should be used with proper credit, a continued appropriation of our matter without any acknowledgment of its source, will compel us, however reluctantly, to avail ourselves of the provisions of the copyright law.

The R. I. Schoolmaster.—Many of the readers of the *Agriculturist* are school teachers—at least during a portion of the year—and to such of these as wish to be advised in regard to educational matters, we can commend the Rhode Island Schoolmaster, published at Providence. Its principal editor is Doct. J. B. Chapin, who is School Commissioner for the State, and has the additional claim of being a zealous horticulturist.

Ornamental Planting.—Our climate is not as well suited to "foliage plants," as that of Europe, and those who follow the directions of foreign writers are likely to fail. Our hot sun is death to certain plants that are the pride of the English gardener, and our attempts at bedding effects, when founded upon European practice, are failures. But few of the variegated Pelargoniums (Geraniums) with which the English do so much, will stand our suns; and so with other plants. Still, we can do something. The Canas, Colcas, in its varieties, the newer sorts of Ricinus, and other things, fairly revel in our hot weather, and we can, by choosing tropical or sub-tropical plants, produce a fine effect. Last summer we made a most effective bed upon the lawn—that was the admiration of all who saw it. The bed was an oval, about 15 feet in its longest diameter. The outer edge was the silver gray of *Chenaria maritima*, or "Dusty Miller." Within this was a row of Colcas, then a row of the Mexican Sage, (*Salvia splendens*), green in summer, but gorgeous with its scarlet blossoms in autumn, and in the center was a group of Canas. Now, we do not wish to put this arrangement forth as a model to be followed; but to suggest some plants which, even if put out as late as June, will produce a satisfactory effect. Along the Atlantic Coast we generally have a cold storm soon after the first days of June, and our experience has been that bedding plants set out early, if they manage to live through the adverse weather, are not, in the long run, as satisfactory as those put out after warm weather has fairly set in.

Darwin's Variations of Animals and Plants is the book of the season. It has received the commendations of the papers whose literary criticisms have the most weight. While we do not at present commit ourselves to all of Mr. Darwin's views, we commend this work as a most remarkable collection of interesting facts. No one who has controverted Mr. Darwin's deductions has denied his accuracy and honesty in presenting facts. To the thoughtful reader this work presents an inexhaustible fund of material, as it not only shows what has been done in improving our animals and plants, but suggests many things for experiment.

Parsnips.—"D. L. M." Dutchess Co., says a Jerseyman advises him not to feed parsnips to milch cows, "on account of their weakening qualities." We have never discovered any bad effects from feeding parsnips. The root is as wholesome as the sugar beet, and the great reason that they are not more fed to cattle is that they are worth too much in the market for human food. They are rarely below \$1.50 a barrel in the New York market, and sometimes bring \$6.00. They are a paying crop at fifty cents a bushel, and at that price they can hardly be afforded for cattle when other roots can be raised for half that sum. Raise the parsnips by all means, but do not feed them out when you can get a dollar a bushel for them, or more, at the nearest market. They want a deep, sandy loam, moderately rich. In garden culture they are sown about 15 inches apart, and in field culture about 30, to admit of cultivation by horse-power. They should be thinned out to 4 inches apart, and be kept scrupulously clean through the season. In good, rich soil, the yield will be from five to eight hundred bushels per acre. They are not injured by the coldest weather, and if the ground be kept covered with a heavy mulch of salt hay, or straw, they can be dug at any season, and be marketed to the best advantage.

Mr. Knox's Strawberry Exhibition.—Mr. Knox is great on raising strawberries and

is not afraid to show how he does it, so he each year holds an exhibition, at which the fruit can be seen on the table, or on the vines. As Mr. K. sends fruit to the New York market all the way from Pittsburgh, he wishes the best package for shipping. Premiums to the amount of \$300 are to be awarded "for the best contrivance for carrying grapes and berries to distant markets." Particulars forwarded on application. We do not know what the requirements are, but suppose that the baskets must be big enough to hold "700" berries. The show will be held on the 17th of June at Pittsburgh.

Hoopes' Evergreens.—This work is being rapidly taken up by nurserymen and cultivators, and we hope that they will adopt its nomenclature, as it will be a great relief to purchasers. To the planter this work is particularly valuable, as it gives, without prejudice, the experience of the author with all the new evergreens.—There is no work extant that contains so full an account of these trees as this does, and we feel a pleasure in presenting so much useful information, in so handsome a style, at the low price of \$3, by mail.

Report of the American Dairy-men's Ass'n.—We have received from the Secretary, Mr. G. B. Weeks, of Verona, N. Y., the third Annual Report of the Am. Dairyman's Society. This institution has been of very great benefit to the dairy interests of our country, especially to the cheese makers, and the annual reports form a course of very instructive reading for any one interested in the increased development of our agricultural resources, and are almost indispensable to practical cheese manufacturers.

Trouble with Cabbages.—J. H. Evans, Ark., has specks appear upon the outside leaves of his cabbages, and the affection proceeds to the center. He does not state whether this happens to the growing cabbage, or after it is stored. We have seen cabbages similarly troubled that had been stored in too damp a cellar, but nothing like it in the growing crop.

Hot-House Grapes.—S. D. Ingraham, Brown Co., wishes to know if hot-house grapes can be made profitable. That depends upon the market; near our large cities, where there are plenty of wealthy people, who will pay \$2 to \$5 a pound, some of our skillful growers make it pay, but it would not be a very profitable business away from such points, and nowhere in unskilful hands.

Pear Tree not Blooming.—R. Middleton, West Philadelphia, has a Vicar pear tree, supposed to be a dwarf, which does not bloom, though about nine years old. If it was a dwarf, it was probably set deep that a portion of the pear wood was buried, and it has thrown out roots and become a standard, and does not bear because it has not yet attained its growth. Probably root-pruning would throw the tree into bearing.

Papering on Outside Brick Walls.—"Dr. E. B." Washington Co., Ill. We infer from your letter that you have already plastered directly upon the brick walls of your house. This is wrong practice. You should have "furred out," as the builders say—that is, put up strips against the bricks, and lathed and plastered upon them—thus leaving a space of free air between the wall and the plastering. The rooms would then always be dry, and warmer than otherwise. If you have plastered upon the bricks, you will be troubled in cold weather, by moisture depositing on the inner side of the wall; and in case storms beat against the wall it may wet through. You can dry the walls rapidly by making fires, and when dry they may be painted with good boiled linseed oil paint. This will prevent water from the outside coming through, but it will not help the deposition of water on the inner side much, if at all, and it is this chiefly which prevents the paper from holding.

Agricultural Editors of Daily Papers.—It has of late become the fashion for daily papers to have agricultural columns, and for these they have "Agricultural Editors." These are a variable lot; some of them hold their places for the sake of the perquisites, and cke out their scanty pay by announcing themselves as purchasing agents. Others are well meaning men, who can write as well on one subject as another, and then again we find one who knows just what he is talking about. In the last named class we place Mr. A. S. Fuller, who does the agricultural and horticultural matter for the N. Y. Sun. Mr. F. is no man warshipper, but has a great reverence for the truth. What seems to him right, he announces fearlessly. Of course, whatever Mr. F. does is well done. We can say that Mr. Fuller's Department is as good as the others in that excellently managed paper, and add that the other departments are as good as Mr. Fuller's. If our readers infer that we consider the Sun able altogether, they will not be far wrong.

Poudrette.—J. Markham, Mo. The name "poudrette" is applied to night soil, or the contents of privy vaults, when dried and rendered nearly inodorous, and used as a manure. This may be accomplished by the mixture of fine peat or dust-dry muck with the material, either daily as it accumulates, or by emptying the vaults and conveying the semidried mass to hard ground or board floors, where it may become partially dry, and when of the proper state of dryness, be mixed with fine dry muck or other similar material: good mellow soil will do, perhaps, equally well. This mixing must be very thorough, and the mass subsequently dried. There is very little danger in applying poudrette too liberally. As an article free from weed seeds, fine, and easily applied in drills and hills, to field crops and to garden vegetables, it is useful; but as a market fertilizer its value is almost invariably overestimated. In the sun-drying of night soil it is well worth while to sprinkle over it, whenever stirred, a good dusting of plaster, to arrest any evaporation of ammonia.

Apple Pomace.—"A Subscriber" has 25 or 30 loads of apple pomace, and wishes to use it as a manure. We have no doubt of its value, if properly composted with lime or ashes. It would, in our opinion, be worth more than chip manure or swamp muck, but we have never tried it, though probably others have.

Clay a Substitute for Muck.—"I. K. C.," Dover, Del. Clay is probably quite as good an absorbent as muck or peat, and there is no objection to a free use of it in your compost heaps. It does not contain so many elements of nutrition as muck. If your lands are sandy, it might prove more valuable than muck in the compost heap. The clay will be better, if kept under cover and beaten up fine before it is used.

Surface Manuring.—"A. H. L.," of Strongsville, Pa. The tendency of the best practice among farmers now is to apply fertilizers on or near the surface. Top-dressing with compost always pays. Fresh stable manures are best applied on grass lands in the fall, and some think this the best time to manure for corn, to be planted the following spring. John Johnston says: "I have used manure only as a top-dressing for the last 26 years, and I do think one load used in that way is worth far more than two, plowed under on our stiff land."

Bone-Dust—How much to the Hill.—"A. K., Jr.," Rural Felicity, Md. Three hundred pounds to the acre is considered a good dressing on pastures or mowing lands. If the land is poor, more will be needed for a good crop of corn, say five hundred pounds to the acre. Divide this by the number of hills in an acre, and you will have the quantity by weight for each hill. Put this in a small cup, and you can determine with sufficient accuracy by the eye, how much to put in each hill, to distribute the whole quantity evenly over the acre. It is safely and economically applied to the growing crop. Better results would be realized the first season, if the bone-dust were mixed with some fertilizer, containing more ammonia, as Peruvian guano or fish guano.

Wood-mold for Corn.—"A Young Farmer," Duckertown, wishes to know if the mold taken from the forest would be of any benefit to corn. The surface mold from the forest, made from the decayed leaves of hard-wood trees, contains all the elements found in the corn crop, and would unquestionably benefit it. We could not tell whether the carting would pay, without knowing the distance. Lime or ashes mixed with the mold would be a valuable addition. Please report the result of the experiment, if account is kept of expenses. Remember that you benefit one crop at the expense of another, if you take the mold away from growing timber.

Plowing Barn-Yards.—"W. D.," Litchfield Co., Conn. This is of great advantage, if the yard is kept well stocked with muck or loam. The droppings of the cows is thus mixed intimately with the muck, and all loss is prevented. It is not quite so pleasant for the milkers to walk on the freshly turned muck, but it improves the quality of the compost usually made in the barn-yard. The muck and the plowing are both likely to be undervalued, at this busy season of the year.

Can a Man Afford to Borrow Capital to Drain his Farm?—"W. B.," Berkshire County, Mass. This is one of the best uses capital can be put to, on land that needs draining. And all land is of this character, where water stands within a foot of the surface during any part of the spring. Two crops are estimated by some, who have experience in this matter, to pay for the whole expense of the operation. The land is more than doubled in value. The English Govern-

ment now loans money to farmers who wish to drain, taking security on the consequently enhanced value of the crops. This is the best possible evidence of the safety of using capital for this improvement, for it is drawn from the experience of a whole people, for a great number of years. Any one undertaking this work should buy and study "Draining for Profit and Health."

Hop-Growers' Journal.—J. S. Randolph and others. The Hop-growers' Journal had a short existence and was discontinued several years ago.

The Texas Farmer.—A new paper with this title is issued at Henderson, Texas, by W. K. Marshall & J. M. Dodson. The editors apologize for the mechanical appearance of their first issue, but they have no need to do so for its contents. Besides a number of judicious selections, there are spirited editorials, the tone of which we cannot but commend. The editors appear to be sensible persons, who think that improving the present hour is of more importance than lamenting over the past. It is good for Texas—or, indeed, any State—when her editors will give such advice as follows, and will be better still when the young men heed it: "Young men, go to work! There is no time to idle now. You must carve out your own fortune. You have no inheritance on which to depend. You must reconstruct your own fortunes by industry, and perseverance, and toil. Labor is honorable, and the ignoble are those who will not work. Get you a home;—and more of like purport."

Price of Farm Lands in Mass.—We notice in an advertising sheet the following prices for farms, mostly in Worcester County, and near good markets. One of 146 acres for \$3,500; one of 115 acres, \$3,300; one of 75 acres for \$2,600; one of 50 for \$800; one of 140 for \$4,500; one of 100 acres for \$3,300; one of 140 acres for \$1,700; one of 115 acres for \$3,200. These farms generally have houses and barns in tolerably good condition, and are within easy distance of schools, churches, and rail-road depots; the buildings in some cases cost all that is asked for the farms. All the cheap lands are not in the South and West, according to this advertisement.

A Grade Alderney.—B. McFarland, Delaware County, has a cow of this stock, that produced in ten months 546½ pounds of butter. The average yield of milk was 13 quarts daily. She has given milk steadily for three years. Can any one give a better record?

Greasing Cart and Wagon Wheels.—Tallow is the best article we have ever tried for wooden axle-trees. The rule is a little, and often. But little can remain if a large quantity is put on, and the most of it is wasted. Castor oil, an excellent lubricator for iron and steel axles, and a damaged article can frequently be had at the apothecary's, at small cost. A teaspoonful is enough for each wheel, and it is folly to use more.

Cheese Factories—English View.—John Bull objects to our American cheese factories, because they will deprive his wife and daughter of an honorable and healthful employment, and by relieving them from labor, lead to idleness and extravagance. Could they not possibly work in the cheese factory, or do any thing else but make cheese in the old way?

Fowls with Scabby Legs.—G. M. Burnett, of Ill., writes: "A sort of dry, scabby crust, fully one-fourth of an inch thick, covers the legs and toes of some of my chickens, making them stupid and lame." This is the disease known as "scabby leg." We know of no cure. Soaking with warm water, and gentle rubbing will remove most of the incrustation. Be careful not to rub or pull off the scales so as to cause bleeding. It usually accompanies close confinement, and disappears if the birds have a free range and access to the soil.

The Prevention of Diseases in Animals.—The Committee on Agriculture of the Massachusetts Legislature recently invited Professor Gamgee to deliver an address in the Green Room of the State House, Boston, on the subject of the Diseases of Animals. The Professor alluded to the extensive prevalence of maladies which were destroying over a million dollars worth of stock per annum, and pointed out that contagious diseases, such as pleuro-pneumonia in cattle, hog cholera, and scab in sheep, often threatened and effected the farmer's ruin. He alluded to the Spanish Fever, which has created such fear, wherever the trade in Texas cattle is carried on, and indicated that the laws governing the distribution of disease were not unknown. This understanding enabled us with the greatest certainty to prevent disease. He stated that, to universal

belief, the improvements in the herds of animals, providing good shelter, feeding well—in short, high farming—tended to the extermination of important maladies. If so much can be done for us by science, why do we not avail ourselves of it? The Commissioner of Agriculture, General Capron, and the chairman of the Agricultural Committee of the House of Representatives are so thoroughly alive to the vast importance of this question, that some action will soon be urged upon Congress. The farmers of the country should use their influence that the subject be not shelved. It is one of vital, personal interest to every farmer. A subject of greater importance and urgency cannot engage the attention of our law-givers. The appalling statistics which General Capron can present, will, we are confident, rouse the people to demand immediate action. We have not been trained to regard the Government as in any degree responsible for the existence or prevalence of disease among animals. Nevertheless, when the true relations of the government to the governed are clearly understood, this responsibility will be placed where it belongs, and our people are fast waking up to a realization of the fact that their government is responsible for the dissemination of information concerning diseases of animals, and for the use of its great powers in checking contagions and infections.

Hens Eating Feathers Again.—E. C. Newton has tried feeding ment as a cure, without success. We have tried it with success, as we supposed. J. H. Mabbett gave a few drops tincture of iron in the water, fed meat with other food, and removed the cock whose feathers were particularly attractive to the hens, turning him in with them only one hour both at evening and morning. Thus he apparently removed the disease (or diseased appetite) from one of his yards.

Refining Sorghum.—The culture of sorghum for syrup has had to combat prejudices of long standing in favor of molasses from the Southern cane, and of sugar-house syrups, cheapness being the prime inducement to purchasers of sorghum syrup. This has had a good market in spite of a peculiar flavor, more or less disagreeable, which it was impossible to remove. We have always felt that the one thing needed to establish sorghum as a northern staple crop, was a process of easy and perfect refining and deodorizing. We are inclined to believe that such a process has been discovered by Mr. Wm. Clough, and is now being introduced by a responsible company. Mr. Clough has exhibited his simple and inexpensive process to us, and astonished us by the complete and rapid removal of foreign and disagreeable flavors, odors, and solid dirt of all kinds from samples of sorghum syrup. This discovery appears to warrant the expectation of such a revolution in sorghum syrup and sugar making as will essentially and prosperously affect our farming interests everywhere.

Flat Culture for Corn.—"H. D.," Hampton, N. J. Hilling is discarded by the best cultivators. The plants will do their own hilling, better than you can do it for them, if you will thoroughly work the soil and keep down the weeds. The rain is more equally distributed and better retained with flat culture.

How Much Land to Support a Family?—"T. K. B.," Burlington, Vt. "Mechness of land is a disease of the American mind. 'Ten Acres Enough' is a stumbling block and foolishness. In England there are many farmers who support large families on six acres, and pay large rents into the bargain. In Germany a farmer calculates to support his family on two acres, and get rich on the other three of his five-acre farm. None but market gardeners, in this country, have formed any adequate conception of the productiveness of good land, when worked up to its full capacity.

Cultivating Wheat.—"B. V.," Bethlehem, Pa. This is done to a considerable extent in England, and is one reason of the large crops harvested there. If the wheat is sown in drills, it is not difficult to pass a cultivator, with the teeth set the same distance apart as the drills, between the rows. All cereal grains would be as much helped by cultivating as is corn.

"Native Cattle."—"A. L.," Dutchess Co. There is no distinct breed of this name. The first importations to this country were from England, Holland, Sweden, and Denmark, and at the South from France and Spain. These were taken of necessity rather than from choice. They had no common likeness, and have been bred without reference to forming a distinct breed. It takes a great many years of skillful breeding to form a distinct race that will perpetuate its own good qualities. We have such races, or breeds, in the Short-horns, the Devons, etc., and a man can find almost any thing he wants in an ox or cow in some one of these breeds.

The Noxious Insects of Illinois.—

First Annual Report by Benj. D. Walsh, M. A., Acting State Entomologist. We should think that the title should have been *Active State Entomologist*. We believe that the appointment is not settled yet definitely, and Mr. W. very modestly signs himself Acting State Entomologist—and he is right, for he has acted very much like one, and presented a report of over 100 pages, which we have only glanced at. We can see that it is very characteristic, by which we mean that things are put in a plain and forcible way, and that the author says what he thinks is right, no matter how weighty may be the names in opposition to him. This we like, and are prepared to get much useful information from his report when we get time to peruse it. In the mean time we congratulate Mr. Walsh and our Illinois friends upon having established a relation that we doubt not will be mutually beneficial. When people are fairly instructed as to the habits of insects, they will then know the tactics of the enemy and be able to fight it. When the people know these things, the peddlers of tree medicines will meet with small sales. We regret that Ohio failed to appoint a State Entomologist. The amount of his salary for several years would have been saved to the people in one year if he had done nothing but take a cluster of the eggs of the tent-caterpillar and gone from town to town and lectured on that one insect alone.

The Diana Hamburg Grape.—

This variety was exhibited at the meeting of the Pomological Society at Rochester in 1867. We have not heard much of it since, save that the vine was tender. We had a vine of it in an experimental collection of the newer varieties, pruned it last fall, and left it unprotected like the rest. This spring we found it alive to the last bud, and more forward than any other variety save the Black Hawk. As far as this goes it would show this variety hardy in the vicinity of New York.

The Ives Grape Again.—

A gentleman writes us from Indian Hill, Ohio, that our notice of the Ives Grape in April "has created a good deal of surprise, not to say indignation here, at the head-quarters of that matchless wine grape." Our statement, to which exception is taken, is this: "When we discuss quality, we must put the Ives very low." But our friend omits what follows: "If it is a question of adaptability to, and profit in particular localities, then it takes a high rank." Now we don't know how we could put the Ives on any finer grounds. Our correspondent will not contend that as a grape it is equal to the Delaware, Diana, or Catawba. But it is a grape that he can grow, and we say by all means grow it. We have been blamed so much in other quarters for saying a good word for the Ives, that it seems a little odd to have one of its friends "down on us." Now we say very distinctly, that while we cannot rank the Ives high for "quality,"—by which we mean, in comparison with the grapes already named—we do think it a valuable addition to our list of grapes, and repeat what we said in April: Grow the best grapes you can; if the Ives is the best grape you can grow, let it be the Ives.

Sundry Queries.—

J. Brack, Miami Co., Ill. "Will the crab-apple answer for raising dwarf apple trees?" We do not know what you mean by "crab-apple," as that term is applied to both wild and cultivated trees. The Paradise stock makes the most dwarf trees. "Has the Wild Locust ever been used for hedging with success?" If by "Wild Locust," you mean the Honey Locust, or Three-thorned Acacia, a tree with inconspicuous flowers and showy fruit—not the least so valued for timber and with long bunches of white, pea-like flowers—yes. It is one of our most valuable hedge-plants. "Are Peach trees grafted on Wild Plum secure against borers?"—No.

Peach Planting and Peach Prospects in Maryland.—

A friend of ours, who has gone into peach culture in Maryland, sends us the following account of what he is doing, and what appear to him the prospects of the crop in that region. He is on the Md. and Del. R. R., not far from Ridgely Station: "I have had many men and several teams, preparing about twenty acres—fencing, ploughing, digging, etc.—for planting between 7,000 and 8,000 peach trees. I have this number here now, of very fine trees, of I think mainly the best sorts, to wit: Hale's Early, (large proportion); Troth's Early Red; Early York; Large Early York, (finest John); Haines' Early, (said by some to be same as the preceding); Crawford's Early Melocoton; George the Fourth; Grosse Mignonne; Crawford's Late Melocoton; Stamp the World; Old Mixon Free; Ward's Late Free; Snock's Late Free; Morris' White. I have not yet seen any person, to be relied on, to give me a full list of best market sorts. After passing Clayton and Smyrna, in Delaware, towns not answering well to the dignity of the famous names they bear, I began to see peach and other fruit trees

blooming finely, and giving present promise of doing all that trees can towards an ample supply of the market. Notwithstanding the abundant bloom all along the road I traveled, in Delaware and Maryland, I have heard a few express doubts of a good crop. But I have examined for myself, and cannot doubt there will be as many peaches on almost every tree of adequate age as it can well hold. I think there are promising germs of peaches in five out of six of the blossoms; and these will be found more than the trees can well mature. I admired many of the peach orchards I saw—some very large—by the wayside or near, and obviously under good care and culture. Some appeared quite otherwise, yet even they are this year struggling to exhibit a fair amount of fruit. I observed one large orchard of small peach trees, averaging, I should think, but about five or six feet high, with compact, symmetrical heads, all blooming beautifully. It was doubtless in good hands, and if I may speak of a peach tree's purpose, every tree designed to reward well the care bestowed upon it."

Raising Seedling Strawberries.—

Those who wish to go into the difficult matter of crossing and hybridizing are referred to the special works upon the subject. On this point we may remark that we have little confidence in many of the alleged crosses, as the operation is attended by difficulties and requires the utmost care. The fact is, our best varieties have in them such a variety of blood, so to speak, that we are not surprised at any thing they may do from seed, even when self-fertilized. In raising seedlings, select the finest berries from the most productive plants, crush them with dry sand enough to separate all the seeds, and sow the sand and seeds in a well-prepared bed, in a shady place, or in boxes of earth where they can be properly shaded and watered. It is better to sow the seeds as soon as ripe, but if desired to keep them until the next spring, the berries may be crushed, the seeds washed out, dried, and kept like other seeds. The seeds should be sown in a light, rich soil; they will come up in a month or six weeks after sowing, and make good-sized plants before winter. Those in boxes should be transplanted to the open ground when large enough to handle, and proper attention to watering and shading given all through their early growth. The first winter the seedling plants should be protected by a covering of leaves or litter. Fruit is borne the second year sometimes, but generally the third. Blackberries, raspberries, and other small fruits, may be sown in the same manner as strawberries.

Hemlock for Hedges.—

"M." You have answered your own question, and place a just estimate upon the hemlock. The trouble is that young trees from the forest are not sure to live. They should have a year's probation in a nursery row, which should be naturally or artificially shaded. The young hemlock trees that live through the first year with this treatment can be used for a hedge or screen with confidence.

Grubs Again.—

Geo. W. Dodge, Bureau Co., Ill. thinks that Mrs. Chappellsmith, whose observations we gave in April last, is wrong in her charges against the Tumble-bug. He says: "The Tumble-bug deposits but one egg in each ball, and the young only emerges as a perfect beetle, the manure serving as food for the grub until it changes into the pupa form. There is no doubt whatever about this, as we have opened them in all stages of development. If Margaret Chappellsmith will open some of the balls a few weeks after they are buried, I think she will find some less 'severe' grubs, and I hope she will no longer blame the poor Tumble-bug for hiding his ball in her strawberry bed, rather than leave it in the manure heap, or bury it in the hard path." This is a matter of observation which can be readily decided. We find in our European exchange many articles concerning the larva of their Cockchafer, which seems to be the equivalent of our white grub, the larva of our May-beetle. All applications to the soil in the way of special manures are found to be worthless as far as the destruction of the grub goes, and it is found to pay, even in field crops, where these pests abound, to employ children to follow the plow and hand-pick them.

Toad Shelters.—

"B. H.," Milton, Pa. The gardener has no better friend than the toad. He loves insects, and will devour a multitude of them. He wants no better shelter than a board raised an inch or two from the ground, by putting small stones or blocks underneath. Here he can have his coveted retreat, and digest bugs, when he has caught enough to stock his larder.

A Southern Item.—

With an increasing Southern subscription, we get many Southern letters. We cannot print all of them, yet we trust our friends will not feel that we are unmindful of their favors. Now here is a note from Memphis, Tenn., which, even in June, is enough to make those of us who live farther north, envi-

ous of the enjoyments of the writer. "Kent" writes as follows: "This latitude is about the northern limit of the *Magnolia grandiflora*, a beautiful evergreen, with its large, glossy leaf, and its magnificence, yet delicate white, fragrant blossom,—almost too fragrant,—and quite too frail for a touch, as that causes it to change its color very soon to reddish brown; so that it is difficult of transportation. The mildness and brevity of winter encourage the cultivation of flowers; the earlier ones, as the Crocus and the Hyacinth, being looked for to open in Feb., while the roses continue on nearly or quite through Dec. In the open air. Of course, the interval can be filled with a variety of plants, and of inseason fruits. We are having green peas from our open gardens; had radishes 20th March; strawberries and new potatoes in market, from New Orleans. Last year 'we' had strawberries the 8th of May; dewberries 10th of June. Some of our most successful transplanting of shrubbery was done in Jan.; but these early 'fits' have their drawbacks, as they start out vegetation too early—as in the case of the strawberry—the first blooms having been blighted, both this year and last, by the cold weather. Last year fruit was mostly a failure from this cause. Fruit prospects at present are good. On the whole, this region holds out its full share of encouragement, both from soil and climate."

Medicinal Plants.—

In many parts of the country people are very properly looking about for new fields of industry, and among many letters we have a number asking about the production of drugs, such as Opium, Rhubarb, &c. With every desire that our country shall produce, as far as possible, the articles that it consumes, we cannot hold out any strong inducement in the way of raising drugs, and for this reason: The value of drugs is governed much by climate and soil. The same Rhubarb which in Asia will produce a valuable root will here produce a worthless one. The common Hemp, which no one here suspects of any medicinal effects—though it sometimes suddenly terminates life—in India produces a gum which is one of the powerful articles of the *matéria medica*. Foxglove (*Digitalis*) in cultivation is about worthless, while in its native localities it is a most potent drug. Now, to all those who have written us upon these matters we must say that the thing is too uncertain to allow of any investment. It presents an excellent field for experiment, but no drug raising that we can at present think of promises as a speculation. We are sometimes asked about our native drugs, such as Bloodroot, Mandrake, etc. These are consumed in large quantities, and in the apothecaries' stores have a high price, but any one who has lived in the West, where these things are gathered, knows that the store-keepers get them "in trade" at a ridiculously small price.

Crooked Lake Gone.—

The great vineyard region of the State of New York was upon Crooked Lake. We used to get our best grapes from Crooked Lake. Valuable experience and words of wisdom used to come from the borders of that beautiful but crooked sheet of water. But Crooked Lake is no more. It has not dried up, nor has the bottom fallen out, but it has had its name changed to the aboriginal Kenka.—May its vines bear as abundantly, may its fruits be as luscious, may its people be as hospitable and as happy, and—they can't help it with all their Indian-coity—may the lake be as crooked as ever, even if it is called by a new name, which everybody will be sure to confound with Cayuga.

Propagating from Green Wood.—

A. Wilder, De Kalb Co., Ill. We can only understand your question as referring to the propagation of grapes, raspberries, etc., from green wood, i. e., the young growth of this spring. We cannot advise you to try it unless you have a suitable propagating house; it will be of no use, as a general thing, to attempt it in the open air.

Information Wanted.—

Will any of our friends who have well-tested recipes for dyeing—especially for carpet warps—please give them. Red and green are the colors most asked for, and we would like plain directions, with the quantity of materials required for a given weight of stuff. Will "A Subscriber," at Brookton, tell us how she colors her materials for rag carpet?

Mowing Machines.—The Decision of Paris.—

John A. Fellows asks: "Will you please inform me and many others who desire to know the truth, through the columns of the *Agriculturist*, which Mowing and Reaping Machines did take the premiums at the Paris Exhibition of 1867. Several claim this honor, and we desire to know the truth from disinterested parties."—Answer: Through the politeness of Mr. J. C. Derby, U. S. Agent, we have received the "Official Catalogue of the Products of the United States of America, exhibited at Paris in 1867," etc., printed in English, French, and

German. It appears that there were five American-built machines entered—three mowers and reapers, one mower, and one reaper. These were entered by C. H. McCormick, Chicago; Clipper Mowing and Reaping Machine Co., New York; W. A. Wood Mowing and Reaping Machine Co., Hoosick Falls, N. Y.; J. G. Perry, Kingston, R. I. (Mower); Seymour, Morgan & Allen, New York, (Reaper). The prizes awarded were a Gold Medal to McCormick, a Gold Medal to the W. A. Wood Co., and a Bronze Medal to Perry. The decision of Paris in 1867 is not an "apple of discord"—for though important and creditable to those concerned, yet no decision is given concerning the rival claims of the two machines, which, as we understand it, divide public favor in Europe, and the decision certainly will have very little influence in favor of these machines or against their competitors here, and which were not represented in Paris. The two parties who take gold medals are the only American Mower and Reaper manufacturers who have made especial efforts to secure an European Market for their machines—having for years had agents there, having there taken out numerous patents, and having put themselves prominently before the European public in various ways.

Weigh your Milk.—"G. R.," Orange County. "Three pailfuls a day," is a very indefinite statement, and may mean twenty-five, or thirty-five quarts, beer measure. In all statements of the yield of milk, it is best to give the weight. Accurate knowledge is of great importance to the dairyman. He should know just how much each cow gives in the flush feed of summer, and that he may determine what cows it will pay to keep, and what should be turned off in the fall for beef. With a set of Family Scales in the milk-room, a pail may be weighed in a second, and the result noted in a book kept for the purpose. Weighing, too, every day, would enable one to determine whether extra feed paid. The farmer might get rid of guess work, and know just what he was about.

Self-Milking Cows.—The importance of stopping at the very beginning any tendency in a cow to suck herself, need not be dwelt upon. The habit, once fixed, is an exceedingly great disadvantage, and such cows, occurring near cities, usually "tie up" at some milk stable where they are kept constantly tied. Mr. E. A. Conkling recommends the occasional application of a solution of aloes to the cow's teats, and says its efficiency is confirmed in his own experience. "R. W.," of



Ingersoll, recommends a simple bit of board inserted in the nose, as shown in the engraving. An oval hole, 3 inches long and 2 inches wide, is cut in the middle of the long side, and near the edge of a 4x6x½ inch oak board; then the thin side, which should be about ½ inch wide, is cut out just enough to allow the broad, grizzly nose to be crowded through. The hole must be large enough to fit loosely, and the ends which enter the nostrils rounded so as not to scrape or hurt the skin. The application of aloes might cure a case taken early, but we are confident it would not help an inveterate sucker. The other contrivance does not prevent eating; and, though we think it would stop most cows sucking, yet, applied to one of some ingenuity and with long teats, we doubt its efficiency. We give the explanation and engraving because the cure is so easily applied, and will, no doubt, be of avail in many cases. In case the nose-jewel should be caught in any thing, it would probably tear out, or one side would split off, and the cow get no serious harm.

Fish Ponds.—Dr. A. Thomburg, Georgia. There is no doubt about your making fish multiply, if your springs are capacious enough to keep the water running through the summer. The pond would be too small for salmon, and probably too warm in summer for trout. Stock with the best fish in your neighborhood. One kind is enough. See Dr. Garlick on Fish Breeding.

What Calves to Raise.—"Dairyman," Norwalk, Conn. We find the large milk producers for the supply of our towns and cities are decidedly in favor of raising their own cows. They may cost a little more, but they more than pay for the expense, in the quantity and quality of the milk they yield. The difference between an average and an extra milk is fully one thousand

quarts of milk in a season, worth sixty dollars, or half the price of an extra cow. The calves to raise are the heifers of your best milkers, sired by a thorough-bred bull of good milking stock. This matter is so well understood, that dairymen, who have their eye-teeth cut, will give any reasonable price for a cow who has such a pedigree. It is satisfactory and profitable to raise one's own cows, and see the steady improvement of the breed.

Artificial Manure for Corn in Ohio.

—An Ohio writer asks: "Will it pay to use concentrated manure of any kind on corn, on strong clay loam? If I could raise enough more corn to pay for such manure I would use it, for I like to raise good crops, even if it pays no better. And the next crops would be likely to pay." That is the right feeling. If twenty dollars worth of manure will give you twenty dollars worth of extra crop, it will pay well. The land will be cleaner, and the extra crop enables you to make an extra quantity of manure, and there is scarcely any concentrated manure (we think of none, except nitrate of soda and sulphate of ammonia) that does not leave something in the ground for the next crop. The trouble, however, is to get a manure that will pay on corn the first year. We have never yet found such a manure. Plaster, at \$5 a ton, will pay on corn, and this is the only concentrated manure that has paid us, on ordinary Western New York land. Bone-dust, if genuine, will pay well in two or three crops, provided you can get it for \$20 or \$25 per ton.

Mutton as Manure.

—"M. S. H.," of Warren, Ohio, writes: "I would like to have you advise me what to do with a few loads of the remains of sheep, that were butchered here last fall for their hides and tallow. After the tallow was taken out, the soap makers took what they could get, and now the remains, bones, flesh, and ashes, are all mixed up together. Is it worth drawing three miles, and if so, how can I use it to the best advantage on our soil, which is a strong clay loam?" We would spread the leached ashes and the finer portions of the animal remains on grass land. The solid animal matter, if there is any, we would break up and make into a compost with muck, or soil of any kind. Turn it two or three times, and by next fall it will make a capital top-dressing for grass, or excellent manure for wheat land.

Goats as Milkers.

—"C. S.," Westerly, R. I. Any of your Irish fellow-citizens would inform you that goats' milk is exceedingly wholesome, and raised at much less cost than that of the cow. The great objection to the goat is its lawless habits, when allowed its freedom. If kept tethered, as it may easily be, it is as orderly as the horse or cow. It will eat much herbage that is rejected by the larger animals, and may be of great service in clearing up brush pastures, and destroying briars and Canada thistles. A good animal will yield from two to four quarts of milk a day for ten months in the year. The milk is much used in Europe, and is considered more wholesome than that of the cow.

The True Way to Enrich Land.

except in the vicinity of large cities, is to depend on home resources. Along the sea-coast we can use fish manure, or Peruvian guano, superphosphate, etc.; but in the interior, say for instance on a "strong clay loam" in Ohio, it will not pay to send corn a thousand miles to the Atlantic cities, and take back manures to grow it with. Feed the grain on the farm, and send us nothing but beef, pork, wool, etc. On such a soil, "tillage is manure." Cultivate the corn thoroughly. Consider it a summer-fallow crop. Decrease the area of grain crops, and increase the area of clover. Never sow a wheat crop, or barley, or oats, without seeding it down with clover, even if it is to lie but one year. Plow under the clover, or feed it out on the farm, and do your best to make "Ohio oil-cake" become a very scarce article in the English market.

Profits of Egg Raising.

—We have received from "A. P. N.," of Newtown, L. I., an account of his poultry yard, which we must abbreviate, in order to find room both for it and for the lessons which it teaches. The account extends from February to December, 1867. Two hundred fowls, fifteen of which were cockerels, were kept. The egg account runs from 1305 in February, worth \$60, and \$43 in March, worth \$100, to 686 in December, worth \$34.50. The greatest number laid in any one month was in March, above stated; the least in November, 655. The greatest number of eggs laid in one day was 117; the least, 14. The price of fresh eggs, received during the period named, was from 5 cents to 60 cents a dozen. No day of the eleven months passed without some eggs being produced; and no month passed without the production of eggs, the value of which exceeded the cost of feed consumed. The principal feed was wheat screenings, corn, and pork-scraps. The fowls were fed as much grain as they would eat up clean, twice a day; and were supplied with lime and cracked oyster shells,

and ranged together over an acre of ground. They were housed in three separate apartments, not well constructed, offering cold comfort only in bleak winter weather; with properly constructed and warm apartments one-third more eggs might have been laid during the months of February, November, and December. Mr. N. says, he would warn every one not to engage in this business on a large scale, without experience and a taste for it, in other words, a delight for it, greater than for any other pursuit; for the constant care and persevering attention absolutely necessary to success will be given by only a few persons.

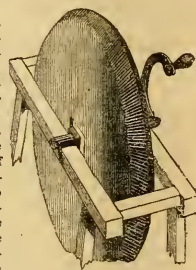
The great profit of egg raising lies in having the hens lay when the market price for eggs is high. To secure this, a good portion of the hens should be young. Liberal feeding is absolutely essential. Animal food should be accessible summer and winter; and pork-scraps is as good an article as can be generally obtained. Warm, light quarters in winter are essential also to success.

Shape of Trout Ponds.

—"Salmo" writes: "It is much the best plan to build trout ponds long and comparatively narrow. Trout brooks in their natural state do not shape themselves into broad squares or circles, in which three-fourths of the water is nearly stagnant, like some of the artificial ponds that we see. It is a pretty safe principle, we know, to imitate nature as closely as possible in our artificial cultivation of natural products, and this principle is certainly never more true than in its application to fish culture. I would therefore recommend as the result of both reflection and experience, to build trout ponds long and narrow—say in the proportion of 1 rod by 4—so that there may be something like a current flowing directly through, and that the trout may know whether they are heading up stream or not."

Grind-Stone for Mowing Machine

Knives.—It is an awkward thing to grind mowing machine knives on a common grind-stone, yet one may be easily dressed so as to be very convenient for this purpose, and yet not seriously injured for most other uses. The accompanying engraving shows a stone which has had the original edges taken off and brought to a V-shaped edge, giving two grinding faces. The exact angle between these faces is immaterial; one of 45 degrees is convenient. Care must be taken not to grind too much on the edge of the stone, or it will soon be rounded off and the angle will be lost. The best stones for this purpose are rather narrow ones, of a firm but not hard texture, with sharp grit, and of even quality. Be careful in grinding not to widen the bevel of the knives, as this gives a weaker edge, dulling quicker, and more liable to injury from striking stones or sticks.



Market Fairs.

—"A. M. S.," Putnam Co., N. Y. These fairs are as much needed in this country as in England, and would be productive of quite as great benefit, both to seller and purchaser. Private sales give the speculator a very great advantage over the producer. He studies the crop prospects, which are much better known in the centers of trade than in any limited agricultural district. A market fair in every county or convenient local center would bring a large number of buyers and sellers together, and enable men to compare views, and fix fair prices. Some attempts have been made to appeal sales to the annual fairs of agricultural societies, but very little dependence is yet placed upon these occasions to dispose of the products of the farm. Where there are permanent fair grounds, and buildings for the protection of stock and other farm products, the most expensive preparation for a fair is already made.

Chester White Swine.

—"H. T. S.," Angola, N. Y. If we take the popular vote upon the best swine for farmers' use, it is unquestionably in favor of the Chester Whites. At the great State fairs of Michigan, Wisconsin, Ohio, and Pennsylvania, last fall, there were more of this breed in the pens, than of all others united. At Pittsburg the only impression left upon the mind in the pigpens was Chester Whites. They are well-proportioned animals, grow rapidly, and make excellent pork. Whether they will make more pork out of a given quantity of food than the Suffolks is a question we should like to see decided by accurate experiments. Many breeders prefer the Suffolks, but the popular verdict is as we have stated. The Chester Whites are widely distributed, and animals for breeding can be had at moderate prices.

Channel Island Cattle.

In making a collection of pictures to illustrate for our readers the cattle of the Channel Islands, we found so great a variety among them, yet such characteristic specimens, that we cannot drop the subject without exhibiting two more engravings of them. One is a mature cow, taken in a strikingly beautiful attitude. We fear our artist will long try in vain to procure a similarly spirited "pose" in the animals which he photographs for us. There is the obvious difficulty in taking cattle and sheep, that it is almost impossible to make them take a position to show their good points and not look stupid and devoid of animation. This engraving comes very near to perfectly satisfying us, and certainly is the best wood cut of a cow

we ever saw. The cut of the Guernsey cow published last month is its equal in every thing but vivacity, and this was gained in the present case by letting the cow's calf gambol on the grass plot at the rear of the photographer. Her owner, Mr. Edward Howe, of Princeton, N. J., writes: "I agree with you that the engraving is a great success and a very true likeness of the cow. Diana is seven years old, a very dark fawn color, with a beautifully developed udder of a rare yellow color. She is of imported stock; her

dam, 'Miss Fannie,' and sire, 'the Bryce bull,' were both imported by Mr. Wm. Redmond." The heifer "Hocy" was two years old last June (the photograph was taken in August). Her owner, Mr. James P. Swain, says: "She was sired by Col. R. Hoe's imported bull Saturn, dam Lap Horn, imported by the late Thos. Richardson. Both parents were from the Island of Jersey. The bull was chosen for his beauty, and the cow selected (out of nearly one hundred imported by Mr. Richardson) for her milking qualities, and was about the roughest specimen of a cow I ever saw of any breed."

SELLING MANURE.—The farmer who sells manure off his place, sells his children's birthright. It may be necessary, to support their lives; if so, well. It may be necessary, in order to obtain money for some pressing need; if so, it would be better, probably, to sell land. It is,

at any rate, putting a mortgage upon the soil, which will probably never be taken up. The mortgage may be removed by the purchase of more manure, or its equivalent; but every year manure grows more and more valuable, and the temptation never to restore it, greater. To the farmer the manure pile is his working capital.

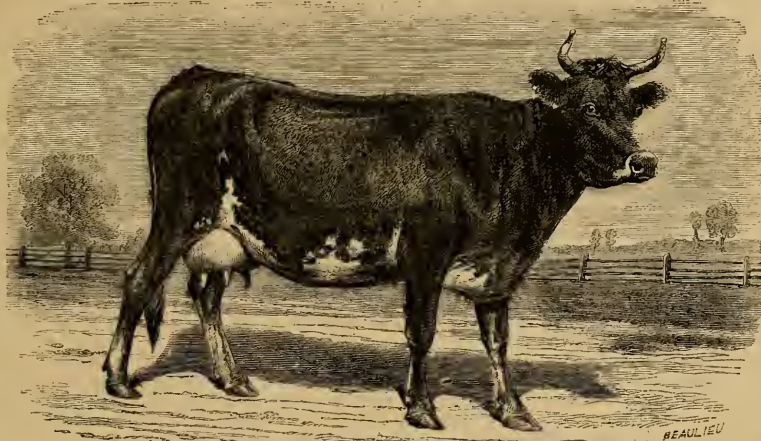
four causes of deterioration—pulling up by the roots, and preventing seeding, mulching, and manuring. No soil can possibly stand this treatment for a long course of years without injury, and very good lands may become so exhausted that it will take years of rest to recover them without the aid of man. Pastures may

be brought up very rapidly with sufficient expense, but the question for the farmer is, how to renovate old pastures economically, and maintain them in a condition of productiveness. Old pastures that have carried a good stock of cattle for many years, and at once begin to fail, usually need phosphates in the soil, and these are best supplied by using bone-dust or some of the phosphatic guanos. Cows fed on these pastures will frequently intimate this lack in the soil by gnawing on bones, and some-

times they become actually diseased because phosphoric acid—that indispensable ingredient both to plants and animals—has been removed from the land. Sowing some kinds of grass seed is often very important, and so great is the benefit of clover, that it will usually pay to buy both red and white clover seed. If the hay from an old natural meadow free from weeds, and yielding a notable variety of grasses, be placed by itself so that the seed may be collected after the mow is empty, no mixture of grass

seed can be better; otherwise, it would probably be well to obtain in addition to both the kinds of clover, the seed of red-top and Kentucky blue grass, called June grass at the East. White clover will often come in abundantly after sowing plaster, and 100 pounds of plaster to the acre will greatly promote the growth of both the red and white on almost any soil. It is not necessary to plow the land, although often a thorough harrowing is useful. The sowing of grass seed with whatever manure

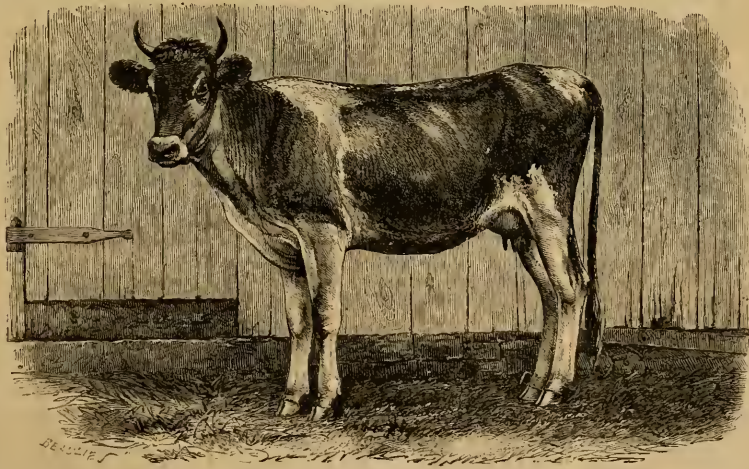
may be applied, and bushing it in, is sufficient. Wood ashes is often one of the cheapest and best dressings. On sandy and gravelly soils, muck or peat that has been weathered a year, twenty cords to the acre, would give good grass. Compost, yard and stable manure, are always good for such lands, and will always pay, if made upon the farm, and certainly some kind of top-dressing should be used to give the



JERSEY COW "DIANA," SEVEN YEARS OLD.

The Management of Worn-out Pastures.

It is a very good pasture that will carry a cow or a bullock to the acre, through the season, and this might oftener be done than it is, on lands naturally good for grass. Instead of this, we have, in most parts of the grazing districts, pastures not half so productive, and in many parts five acres will not support a cow through the summer. The cows are frequently turned in on or before the first of May, before the grass



JERSEY HEIFER "HOCY," TWO YEARS OLD.

is well started, and it is kept close-cropped all through the season. In time of drouth there is no relief for the pastures. Many of the grass plants are pulled up by the roots, as one can see by examining the sod. The cows are kept in yards at night, and most of their manure is lost to the pasture. Few of the grasses have any chance to go to seed; and when winter comes, there is no covering for the roots. Here are

young clover and grass a good start. Finally, give the land a chance to recover, and the grasses time to become well established. They will seed abundantly, and the whole ground will become well stocked with all the varieties that you have sown, and others will fast work in. Then in the following years care should be taken not to overstock. Short grass is damaged both by drought and freezing. Give ample time in the fall for a covering to grow and protect the roots. Pastures for cows and growing cattle need occasional top-dressings of yard manure, bones, and ashes, to keep up their fertility, while those fed by bullocks or sheep, and occasionally plastered, will grow better from year to year. In milk, and in the frames of cattle raised upon the land, large quantities of the material of which bones chiefly consist are removed—while in the production of fat and wool no such exhausting tax is laid upon the soil.

Walks and Talks on the Farm.—No. 54.

"Nineteen acres of potatoes, 200 bushels per acre, and \$1.25 per bushel, would bring \$4,750." This is a very simple sum in arithmetic. Had I made such a calculation last summer and acted upon it, I might have had to pay an income tax! I had nineteen acres of potatoes, and I sold them this spring for \$1.25 per bushel. The only trouble is, I did not have 200 bushels per acre. "Why?" The common answer would be, "owing to the dry weather." The true answer would be, "poor farming,"—and this arises in a good degree from want of faith in manure and good culture. I have no doubt that \$500 judiciously spent would have put \$2,000 in my pocket. It costs little more to plant and dig a crop of potatoes that yields 200 bushels per acre than one that yields only 75 bushels. There is no other country in the world where good farming, as compared with poor farming, will pay so well as in the United States at the present time. How long this state of things will last, it is not safe to predict. I do not wish to see the price of wheat, barley, oats, corn, beans, and potatoes, as high as at present. It is not healthy. What farmers want is reasonable compensation for their labor, and capital, and skill. Doubtless we shall have a change, sooner or later; and prices may go as much below the true standard as they are now above it. But, on the whole, the indications are that we shall never see as low a range of prices for farm produce as before the war. At all events, I am confident that those farmers who make an effort to clean and enrich their land will in the end make the most money. And the prospects are that they will not have as long to wait for returns as is generally supposed.

An unwillingness to wait is one cause of poor farming. I know a young man whose father has 640 acres of land in Iowa, that he offers to give him if he will work it. He proposes to go out there this summer, and "put in 200 acres of wheat, and then return and spend the winter in Rochester." If he does, he will know more about farming in a year or two than he does now. A few days since I asked a gentleman who commenced life poor and who is now reputed to be worth several millions, how he made his money: "I looked ten years ahead," he replied. This same man has a beautiful farm, and one of the best herds of Short-horns in the State. With a bank account good for a million, most men when they commenced farming would put up a grand house and a "model barn." Not so Mr. Farsecing. He looked "ten

years ahead," and commenced at once to improve his land and lay the foundation for a splendid herd of cattle. I know another gentleman who has a fine farm, an elegant house, and splendid buildings, and takes great pleasure therein; but, said he, mournfully, "I have not a son or a daughter that will stay at home. They all leave me, and it is rare that one of them spends a night in the house. They care nothing for farming." On the other hand, Mr. Farsecing's son takes charge of the farm and attends personally to the cattle, and is as enthusiastic about farming as the father himself. And as we were going to look at the cattle, young Ezra, the grandson, left his swing in the grove to come too, and his father lifted him on the broad back of as fine a Short-horn cow as is to be found in the world, and there he sat as proud and as happy as one could wish even a child to be. And grandpa, too, was as happy for the moment as though he was as poor as myself. I do not respect a man merely for his wealth, but I cannot but admire the man who, like the one referred to, habitually looks ten years ahead, and lives and acts for the good of his race.

This same man, having an acre or two of waste land on the farm, has set it out with oaks, white ash, English elm, and other valuable trees. His pear orchard contains a few dwarf trees, but nine-tenths of them are standards. He was willing to wait; and he has not waited in vain, for already one of his standard Seckel trees bears ten bushels of pears a year.

I believe the time is fast approaching when we shall turn our attention to tree planting on hilly land. We have swamps enough growing up with second-growth soft wood, but that is not what we want. Such land, if drained, would be more profitable in grass, and thus add greatly to the beauty of the landscape and the healthiness of the country. But in many sections there is considerable dry land too poor or too hilly to plow or pasture with advantage, that it would pay to fence and plant with forest trees. The late Duke of Atholl planted over ten thousand acres of such land in Scotland, with larches, besides many acres of firs and other trees. And it is said that the timber from these trees, if now brought to the hammer, would sell for the enormous sum of fifty millions of dollars!

You should not speak so disrespectfully of our path-masters. They are useful men. We have too few holidays. Farmers, it is said, live isolated lives, and any opportunity should be improved that calls them together. Working on the road once a year is a social rémion. The young men perform feats of strength and skill, and the old men talk of the deeds of other days. And, on the whole, these gatherings do very little harm. The road, such is our splendid climate, is injured far less than one would expect. The holes they scrape out on the sides fill up again in a few years, and I never knew of any one being drowned in them. The cows, too, I have observed, seem to prefer to wade through the water rather than travel on the road. These holes are generally scraped down to the clay, and the bottom is consequently tolerably firm. This advantage would be lost if the ditch was cut level so as to carry off the water. These firm, clay spots would have to be thrown out. The water, too, would pass off so quickly that instead of standing on the sides of the road it would flood the fields and make it necessary to clean out the ditches and water-courses. Is it not a great deal better to let the water soak

away gradually? In our dry, hot climate it will all disappear, except in a few spots, by the 4th of July. It will not do to have firm, dry roads in the country. It would ruin the Doctors. The women would walk out every day and soon know more about what was doing, and what was not done, on the farm, and in the neighborhood, than their husbands. Even now, some of them want the grass mown in front of the house, and the weeds pulled out of the walks, and they want to send to Vick for posy seeds, and a hot-bed must be made, and they talk about asparagus and cauliflowers. Now, Sir, if they can get about in the spring of the year without having to crawl on the fences, I would like to know where this thing is going to end? Let your wife see a bed of hyacinths in flower, and she'll want just such a bed herself next spring—and what's more, she'll have it. Then the women will be changing seeds and plants, and at night it will be, "John, after you have smoked your pipe, instead of going to the corners, wont you just dig a place for some flowers I got to-day? They will spoil unless they are set out at once." And you'll have to stay at home and do it. You think you wont, but you will. Better nip the thing in the bud. Be careful who you elect path-master. If he should only take it into his head that instead of scraping dirt on to the low, wet places on the road, it would be cheaper to drain off the water from underneath, the evils I have spoken of will come upon us. And it is not improbable, even, that farmers' sons would polish their boots. And then the next proposition would be to have the buildings all spouted and drains cut to carry off the water, so that the young gentlemen could feed the pigs and do other chores about the farm without turning up the legs of their pantaloons.

I received a letter from a farmer in Ohio to-day, asking for advice, which, as I am not acquainted with all the circumstances of the case, it is not safe to give. He says: "I was a farmer's son and had the good fortune to be born poor. I stayed on the farm until I was 17 years old, and then went to a trade. My first earnings were scrupulously laid aside to purchase the farm where I now reside. It contains 103 acres. I am in my fiftieth year, and failing health and the impossibility of hiring skilled labor make things go quite slipshod. Have two sons, the eldest in college, the other too weakly to labor. My wife's health is too poor to have the family increased by work hands. I do not like the idea of selling out, but how shall we manage?"

A man is just in his prime at fifty, and should have as good health on a farm as in a city or village. If he has property enough to live on without work, and if he understands farming and likes it, I do not see why he should sell and move into the city; and if he has not, the question for him to decide is, whether he can do better at some other business. If he has doubts on this point, better stay on the farm. Put up a small tenant house. This is far cheaper and better than boarding men in the family. Take the general direction of the farm, keep things in order, do light work, attend to the stock. In this way a man who understands farming can often earn or save more money than he could by going into the field to plow. Farmers do not realize how much they get in the shape of house rent, fuel, fruit, vegetables, pork, lard, milk, butter, eggs, etc. Everything is now so high that people of moderate means have hard work to get along in the cities. If a man is on a farm

and doing well, he had better stay where he is; and if he is not doing well, let him "consider his ways," i. e., let him sit down and look the matter honestly in the face and ascertain where the fault lies. A little self-examination takes the conceit out of a man, and real humility is the parent of good resolutions, and leads to success.

One of the most prosperous farmers in this section was a city man—I think a painter—who saved a little money, and bought, twenty or more years ago, a piece of so-called poor, sandy land, that the timber had all been cut from. He paid about \$500 for one hundred acres. It is now worth \$20,000. When he went on to the farm, his health was poor, and he has never been what is called a "hard-working man," but he attended closely to his business. He has a tool-house, and a place for everything, and keeps everything in its place. Everything in and around the house and barns is as neat as a pin, and order and system pervade all his operations. It was thought when he bought the land that it was "barren." He found, however, that it would grow clover, and in this case, as in so many others, plowing under clover made the land rich enough to produce anything he liked to sow or plant. I need hardly say he had a good wife,—one that interested herself in farming operations, and was not continually longing to get back to the city.

I never understood, till the other day, why farmers on hilly land do not irrigate their meadows. I was walking over a farm on the borders of Cayuga Lake. There was a little stream running through it. "For fifty dollars," I said, "that stream might be made to irrigate ten acres of land." "That is true," replied the owner of the farm, "but when you want to irrigate, the water is not there; it dries up in the summer." "That is of no consequence," I replied, "it is here now, and the early spring and late fall is the time to irrigate in this country." On further conversation it appeared that he thought the object of irrigation was to furnish water to the plants during dry weather. And he believed this was the common opinion. If so, it accounts for the fact that so few farmers adopt the practice, even when the land might be flooded at a mere nominal expense. Of course, streams which dry up will only make "catch meadows," but even in cases where you can only flood the land for a week or ten days in spring, the benefit is very great. It will give you a good bite of grass three weeks or a month earlier than where it is not irrigated; and in a spring like this, when if a man had had good grass butter in April, he could have got 75 cents a pound for it, early feed is a great object. Those who raise early lambs for the butcher can also appreciate the importance of such food for the ewes.

It is a great mistake to keep a poor horse. I have one that has been on this farm, or some other, for about twenty-five years. He has been a good horse in his day, and I can hardly make up my mind to give him half a pound of haulage, and let him rest from his labors. And yet I am sure I could not invest a dollar to better advantage. He eats just as much as one that does more than double the work. It costs at least one hundred dollars a year to keep a horse, and it is far better to pay four or five hundred dollars for a good team than take a poor one for nothing. Man and team, counting shoeing, harness, etc., cost about \$500 a year. And who does not know that a good team will do from one-third to one-half more than a poor one?

Farmers, as a general rule, keep too many

horses. In old times, when hay was worth only \$5.00 a ton, and oats 25 cents a bushel, it might pay better to keep an extra team than to hire an extra man. But who can now afford to let a team lie idle, while the teamster is hoeing corn or planting potatoes? With proper management the requisite number of horses can be profitably employed on the farm throughout the season. Of course, it is sometimes well to let a horse run to pasture a few weeks, but that is another question. To let him lie idle merely because you want the teamster to do work that another man could be hired to do for \$1.50 a day, is poor economy. Ellwanger & Barry, who study these matters closely, say each team and man costs them \$4 a day.

There are few things which annoy me more than being obliged in cultivating corn or potatoes to go twice in a row. A strong horse and a good steel-tooth cultivator will do almost all the work as well going through the row the first time, as by coming back in the same row. All that one gains is in being able, when the rows are not absolutely straight, to get nearer the hills of corn. The same object, however, might be attained by going only once in a row, and keeping the cultivator the first time through, close to the right hand hills, and the second time through, a few days later, to the left hand. Or, what would be better still, keep always to the right hand, but commence the second time through at the top of the field, instead of the bottom. In this way the cultivator would run the second time, in the opposite direction from the first. In this way the hills can be "dressed out" just as well as by going twice in a row, and the land gets an extra cultivating, or what is equivalent to it. I do not know that I make myself understood. The object of cultivating is to kill weeds, and enrich the land by exposing the particles of the soil to the atmosphere. Now no one will contend, that if we should run a cultivator up and down the row eight times in one day, it would kill as many weeds or expose as many different particles of the soil to the atmosphere, as if we cultivated the land eight times, once a week for two months. We should cultivate just as much in the one case as the other, but the effect would be very different. If only a day apart, or even half a day, so far as enriching the land is concerned, two cultivations are better than one, twice in a row.

Do I think it would pay to cultivate corn once a week for two months? I am sure it does on my land, especially if in making up the estimate the following crop is taken into consideration.

More About Beans.

After the article on Bean Culture which appeared in the last number, was in type, we received a communication from a farmer in whose judgment we place great confidence, from which we extract the following:

"With a good yield the price may be very low next winter. We have known beans sold for 75 cents a bushel, that would now bring \$5.00. At \$2.00 a bushel, beans are a profitable crop to raise. They are planted after all other spring work is done, and gathered in time to permit the land to be sown to winter wheat. If the land is in good condition and the crop is kept scrupulously clean, twenty bushels per acre may be expected in an ordinary season, and thirty bushels if the season is favorable.

The impression that beans do best on poor

land is a mistake. When the country was new and the land rich, there may have been some truth in this idea, but that time is past. On dry upland (and beans should be planted on no other) it is rare, indeed, to find soil that is too rich. The crop has such a short season to grow in that it is essential to have an abundance of plant-food immediately available and within easy reach of the roots. Another mistake, equally common, is in not keeping the land clean. We know a farmer who planted five acres of beans. He hoed half an acre, and then, other work pressing, gave up the job. The weeds soon smothered the crop, and he had more beans from the half acre that was hoed than from all the rest of the field. We have seen a twenty-acre field of beans so full of weeds that in the latter part of July not a single bean could be seen from the road. They were there, however, and were finally harvested, and bringing a high price, paid a fair profit. Had they been properly cultivated and hoed, they would have almost paid for the land. As it was, the farmer said he should raise no more beans because 'it was such an awful job to pull them.' To pull beans from among thistles is, indeed, unpleasant work, but that is not the fault of the beans. On clean land, beans can be pulled for \$1.50 to \$2.00 per acre.

Beans are generally planted on sod ground. But if the land is clean they do equally well on corn stubble or other plowed land. Some of the best crops we have ever seen were grown by nurserymen on land that had been cultivated for several years with young trees. A good rotation is to plow up an old sod, plant corn, and the next year plant beans, and then wheat. If the corn is heavily manured and thoroughly cultivated, the land will be in good order for beans. If it can be plowed early in the spring and again just before planting, say the first week in June, and the beans are cultivated once a week for a month, and once or twice afterwards, the land will be as clean and the wheat nearly as good as if summer-fallowed. When beans are raised on an extensive scale, they are sown with a drill. There are several excellent bean planters that do the work expeditiously and well. The drills are about thirty inches apart, and the seed is dropped in hills a foot apart in the rows, with four or five beans in a hill. It takes a bushel or a bushel and a half to the acre, according to the size of the beans."

Cotton Seed Meal for Feeding.

Cotton seed cake meal, now to be found in our markets, is the residue left after pressing the oil from the cotton seed, ground for feed. The cotton seed as it comes from the gins, is covered with a hull or shell, which in the upland variety is clothed with a short down of cotton fiber. The seed makes more and better oil, and better feed, if it is deprived of this hull; nevertheless, there is, or has been, considerable seed pressed which has not been thus decorticated. There are several patented processes for this hulling or decortication. After pressing, the cake is ground for feed as we find it, and sold at considerably lower prices than those of linseed cake and meal. Its actual value for feeding purposes is considerably higher. Prof. S. W. Johnson, in a report made to the Connecticut State Agricultural Society in 1877, says: "Cotton seed cake is much richer in oil and albuminous matters than the linseed cake. Three pounds of the cotton seed cake are equivalent to four of linseed cake of average quality. The value of the

article as a manure is obviously very considerable. The dung of cattle fed upon it will be greatly richer, both in nitrogen and phosphates, than that of animals fed on hay alone. Where stock is kept, probably the best manner of using this cake as a fertilizer is to feed it to the cattle, and carefully apply the manure they furnish. In this way, whatever is not economized as fat or flesh will be available as manure."

We have tested in the manger the soundness of these views from the laboratory, and have no doubt of their correctness. We overcame a prejudice in using the meal for feeding milch cows, and found it a very valuable article. All animals will not eat it at first. If it is not relished at once, it may be mixed in small quantities with corn meal, and sprinkled with it over cut feed. The most reluctant animal will soon come to eat it greedily. We would use the meal in connection with both roots and hay in the winter, feeding not more than four quarts a day. It is said to be dangerous to feed it to young calves while living in part upon milk. There are well-attested cases upon record of its having killed them. Whether this was owing to some defect in the preparation of the meal, we are not able to say. It is well for stock raisers to be cautious. It is a safe article for cows, increases the flow of milk, and keeps them in good condition. It stands at the head of all kinds of fodder in producing manure rich in nitrogen. As the value of manure depends mainly upon the food from which it is made, farmers ought to look a good deal more sharply at this matter than they have been accustomed to.

Sod Fences—Their Utility.

The sod fences of Ireland are famous,—and the hedge and ditch are met with throughout England. The moist nature of the climate has much to do with the maintenance of these fences in permanence and beauty. In this country sod fences will last many years in moist ground, but severe drouths will brown them, frosts will crack them where the grass dies out, and weeds will be found, we fear, in many places more hardy than grass. Nevertheless, sod fences have their uses with us. There is no better way of putting a fence across a swamp; sheep will go over them with ease, but they should never be pastured in low, wet land. Where there is a great scarcity of timber they may be used to advantage; and made broad on the top and surmounted by a hedge of thorn locust, even sheep will not pass them. In response to a request published a few months since, Mr. A. J. Sanborn, of Ogle Co., Ill., sends the *Agriculturist* an account of his experience, as follows:

"I have been a resident of Illinois for twenty-eight years and have helped build some sod fence, and have seen a good deal more built by

tion of the ditches and wall.] First a row of sods is set six inches from the edge of the ditch on each side, being backed with earth, to hold them in place. Then fill in between, and when the filling is high enough, lay another row of sods. When it is done, the wall will (or should) be five feet on the base, three feet high, measured on the slope, and three feet across the top. Each ditch will be three feet wide at the top, one

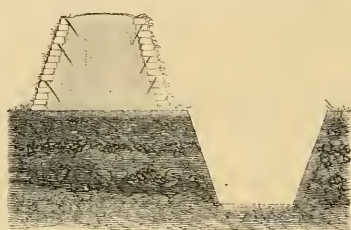


FIG. 2.—SOD FENCE.

foot wide at the bottom, and two and a half feet in perpendicular depth. Such a fence will last a good many years, and is the nicest place for lambs to play upon I ever saw, and the greatest nuisance that ever was in a neighborhood."

"J. McL," of Bergen Co., N. J., says that an excellent and lasting fence may be made as follows: (Figure 2 shows this plan in section.) "If a wall three feet high is required, which is equal to a fence five feet high, stake out lines five feet wide for the wall, and four feet for the ditch. First cut all the sods four inches wide where the ditch is to be, for a rod in length, and lay them where the wall will be made. Then lay them up on each side like brick, breaking joints, and at the same time filling in behind and between the two rows, or successive layers of sods. The earth must be trodden and pounded hard, and the sods settled firmly to their place by strong raps with the broad side of the spade. The sides must slope at such an angle that the wall will be three feet wide at the top. When the sods are all used up, more must be pared from the meadows adjacent, and the wall thus raised to the desired height. There will be plenty of earth in the ditch to make the wall. The top should be left flat, so that the rain will soak in, and if the filling settles, as it probably will, more earth may be taken from the ditch to fill it up level. If laid solid it will not give much, and the sods may be fastened by pins a foot long, cut from brush, as shown in the section."

The Cotton Moth.

In the *American Agriculturist* for December last, appeared a valuable article from "T. A." of Washington Co., Texas, on the Cotton Moth. One or two errors crept into it, and in pointing them out the author mentions some other valuable facts. In the beginning of the article the entomologist SAY is called Jay, and in the last paragraph, where the author advocates the use of Cresylic soap "in solution, for the prevention of the ravages of the cotton worm," and reports the results of some experiments which Mr. A. urged planters to make, it should read: "Many did so (experimented), but with a simple watery mixture of crude carbolic acid. And almost every experimenter made the same report, 'If the mixture is used in sufficient strength to kill the worm it also destroys the leaf of the plant.'" "As printed," Mr. A. says, "it makes me do great injustice to the valuable compound I used; which will not destroy the leaf, if used in such

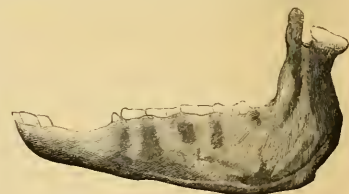
solution as can be distributed over the plant. I find not more than two per cent of the acid will combine with water, so that, when applied to plants, (and so it is with petroleum), the water runs off the glossy surface of the leaf; but the acid adheres to the leaf, in its full strength, and destroys it. The solution of the saponaceous compound (cresylic soap) clings to the leaf.

"In confirmation of my belief as to the hypernation of this insect, I found a healthy, active moth in an enclosed gallery of my house, about ten days ago, after several killing frosts.

"We are having a trying winter on stock, and thousands upon thousands are dying. No hay or rough feed, of any amount, was saved last fall, except by white labor. And with everything devolving upon us, the quantity saved was very limited. The *Migratory Locusts*, of which I sent specimens, ate up a great part of the green pasture. The 'Prickley Mesquit' of Texas alone escaped, and that only partially. Of the myriads of eggs deposited—and of which, too, you had specimens—I cannot now find a trace. Destroyed, I think, by the severe freezes. Sheep have suffered greatly—the more as they are all more or less fearfully infested with scab and other insects."

Wolf-teeth in Horses.

We notice occasionally in agricultural papers, and find not infrequent mention in our correspondence, something about wolf-teeth as affecting the sight of horses. This is an ancient prejudice and entirely without foundation in fact. The name wolf-teeth is given to small, supernumerary teeth, which occur occasionally



WOLF-TEETH.

in the mouths of horses, and are situated commonly in the upper jaw, but sometimes in the lower, as shown in the accompanying figure, just in front of the first grinding tooth. They are most usually noticed in the mouths of colts, and when the permanent teeth come are almost invariably crowded out, and thus shed are not renewed. Sometimes the root of one of the milk teeth is not absorbed properly, but crowded inward, where it remains, and is called also a wolf-tooth. This may cause the horse considerable inconvenience. A third application of the name is to points or edges of teeth not ground off by the action of the teeth upon each other in chewing and biting, when these points become so long or sharp as to cut the tongue or lips. It is an absurd prejudice, (for which, however, the ancients are responsible), that attributes diseases of the eye to the supernumerary teeth above mentioned. There is not the least foundation for such a view. The wolf-teeth may remain, or they may be taken out without fear of any evil influence upon the sight of the animal. If not shed they may be a nuisance, and are always a deformity, and may very properly be removed. This is easily done by an oak pin of convenient shape placed against the tooth and struck a smart blow with a mallet. The sharp angles or edges caused by unequal grinding are

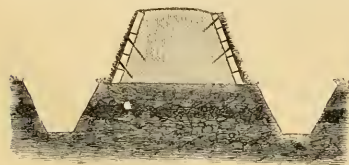


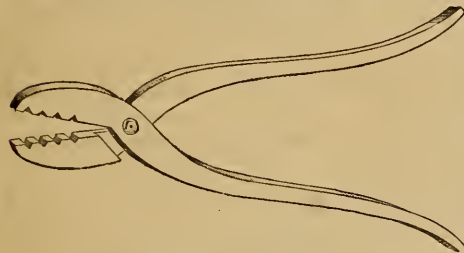
FIG. 1.—SOD FENCE.

others. The best is made in this way: The ground is laid off twelve feet wide, with a strip six feet wide in the centre. The sods are cut with a spade from the three-foot strips on each side so that they will match and make a facing for the bank or fence. [Fig. 1 represents a sec-

best filed away. The engraving represents the lower jaw of a yearling colt, showing a rather large wolf-tooth in front of the first molar.

Quaker Practice on Canada Thistles.

Mr. Truman Mabbett, of Vineland, N. J., has too much pluck to run before even Canada Thistles, and in accordance with his Quaker principles he is averse to a fight. [We don't know who does not object to a hand-to-hand conflict with this weed]. Nevertheless he sends the *Agriculturist* a sketch of an instrument of death



MABBETT'S THISTLE FULLER.

to Canada Thistles, which, faithfully used, will, we doubt not, exterminate the pest. He writes: "I send you a drawing of a pair of long-handled wooden pincers, that any one handy with tools can make. This is to be used to pull up the sprouts which come up after mowing off the thistles just before they are in flower. This should be done either just before a shower or during a rain, in order to let rain run into the hollow stems and rot the root. In my case this instrument proved most satisfactory. I was living in Saratoga Co., N. Y., and bought a piece of good meadow land cheaply, because it was completely covered with Canada thistles. I mowed and pulled, as above described, for two years; and the third year, this land, being then quite free from thistles, made one of my finest meadows. I have now found the pincers to answer another good purpose on my Jersey five acres—that is, in pulling blackberry sprouts, when it is desirable to preserve the rows in regular lines. The handles being long, one can use the implement when standing erect. The total length of the pincers is thirty inches; the width of the jaws three inches; length of the same, eight inches. The pulling is more easily done after a rain, when the soil is moist, than at any other time."

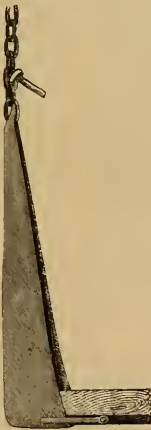
Gang Plows and Sulky Cultivators.

Gang Plows are properly two or more plows united, or combined in one implement, to be drawn by one team or engine. The advantages offered by such combinations of plows are several, the principal of which probably is that a good driver is all the plowman and driver needed for two or three plows. Practically as things shape themselves in actual use, two plows, where deep plowing or sod breaking is to be done, are all that can be economically used, and when more than two are used they must be so light as to approximate to cultivator teeth, and the work performed would ordinarily be better done were a larger number of cultivator teeth substituted. Gang plows and sulky cultivators are therefore natural modifications of the same implement, and there are several in market, both at the East and at the West, recently brought out, yet having had several seasons' trial, which commend themselves to

agriculturists. Their desirable qualities are so obvious, if they are good for anything, that it has not been necessary to "push" and "pull" them in order to secure their introduction. But, as the number increases, there will be, of course, great efforts made to establish claims to superiority. These we do not attempt to decide, but most heartily commend the principle upon which they are constructed, as eminently useful in saving labor, both in simple plowing and in hoeing corn and other crops. In the lightest work done by them, as in hoeing corn, two horses are necessary, for the implements are driven astride the rows. In the culture of corn, potatoes, sorghum, sugar cane, cotton, and all crops planted in hills and rows, far enough apart for two horses to be used, and which require hand or horse tillage, a vast amount of labor may be saved by the Sulky Cultivator. In buying, select one which has little machinery, which is strong, but not heavy, which may be easily repaired if broken, and in which the plows or teeth may be easily changed. The driver's seat must be easy and secure, and the feet should do a good part of the work of elevating the plows over obstacles, depressing, etc.

Whiffletree "Boot" for Plowing Orchards.

The benefit an orchard may receive from the tillage is often offset by the damage done by the careless plowing of a heedless plowman, so the labor may as well be spared. But it is not necessary to injure the trees. The old plan of slipping old boots over the outer ends of the whiffletrees answered a tolerable purpose; but a better plan is communicated to the readers of the *Agriculturist*, by Mr. Henry Körner, of Belmont Co., O. It consists of a strong piece of harness leather, wide enough to fold over the end of the whiffletree, (which should be square on the end) and extend along the chain trace, gradually tapering until it terminates in a strap, by which it is attached to the trace. The broad end is fastened to the whiffletree by a short strap buttoning over a screw head. We know no better name to give this tree protector than whiffletree boot. Mr. K. thinks rubber (such as worn-out pieces of belting, we presume) might be better than leather.



WHIFFLETREE BOOT.

AVERAGE PRODUCTION OF CROPS IN NEW YORK AND IN GREAT BRITAIN.—The average production of wheat in 1863 in N. Y. State was 13.36 bushels to the acre, in Great Britain, the estimated average for 1867 was 24.4; of oats, 17.16 bushels to the acre, in Great Britain, 41.2; barley, 16.27 bushels to the acre, in Great Britain, 33.7; showing very nearly twice the product in Great Britain of all these cereals. The comparison of the root crops is quite as favora-

ble to England. Yet the soil and climate of New York are as well suited for all these crops, with the exception, perhaps, of turnips. The difference is mainly one of cultivation. With as much skill and capital invested in our farming we can show quite as good results. The English farmer, as a rule, does not own his land, but has a much larger capital invested in stock, tools, fertilizers, and labor. He manures liberally, and cultivates thoroughly, and gets his reward. If one who hires the land can afford to go to this expense, we who own our farms can much better afford it. The English average yield has been increasing for years; ours is decreasing. Is it not about time to farm more thoroughly, and turn the tables?

HENS' NESTS.—Among the numerous handy contrivances which Mr. J. H. Mabbett, of Jersey City, has in his very complete hen-house, are



Figs. 1 and 2.—HENS' NESTS.

his box nests, of which we made a sketch and present an engraving. These boxes are made of three-quarter inch boards, planed, and measure 12+12+15 inches, the measure from front to rear being greatest. They may be made with both bottoms and tops, if desirable, but it is better to use one box as the cover for another, or to cover one course of boxes with a wide board, which will form an alighting shelf for nest boxes set upon it. The square end presented to the front has a pear-shaped hole sawed in it, widest at the bottom. This remains open, but the piece which comes out of it is fastened by a screw in its small end, so as to form a lid to a hand-hole in the back end, as shown in fig. 2. These boxes may be arranged in three or four courses, and by alighting shelves and ladder made entirely accessible to fowls, while the eggs may be removed from the rear without disturbing the hens. Sitting hens may have eggs put under them, and by turning the nest box around they will be safe from the annoyance of others.

Harvesting Barley.

There is more than one good way to do a great many things, and circumstances alter cases in times and ways without number. It is impossible to advise positively in regard to what is absolutely the best way to conduct even simple farming operations everywhere. Hence no agricultural paper is an infallible guide for every body, in matters of practice, however excellent and practical its teachings. A correspondent who believes in doing things both well and cheaply, writes out clearly his way of harvesting barley. Referring to the article on barley culture in the April number of the *Agriculturist* he says: "I most heartily agree with the writer until he arrives at harvesting. He says: 'In harvesting, the crop is cut with a reaper, and it is better to bind it into sheaves.' It may be better to bind and even shock as we do wheat, but it costs too much. My plan for harvesting barley, is this: I set my machine as for harvesting wheat, taking off the table or platform upon which the grain falls, thus letting it fall upon the ground. I proceed to cut down my piece the same as grass, except the machine being set in the manner described, the stubble is left per-

haps four or five inches high, thus allowing the knives to pass over ordinary stones and clods. Barley cut in this way—and I may say in whatever way—should be cut while quite green, and no loss will be sustained by the team walking over it. The grain being thus evenly spread over the ground, a few hours' sun is sufficient to cure it for the horse-rake, which is here put in, with hands to put up in cock. Barley well put up, cut in this way, will shed rain much better than barley thrown from the machine in bunches, and put up in like form. The first season that I cut barley in this way, my neighbor over the way cut his, and threw it off in bunches. Mine was soon cured and put up; his being in bunches, did not cure before it rained. He had to turn it all over, and before it was dry it rained again. Again it had to be turned, and at last it was put up. When we came to thrash, his barley was all badly stained, while mine was nearly all bright. My barley was harvested with half the labor of his, and the straw, as well as the grain, much better. He was not slow to see, nor will the many readers of the *Agriculturist*, if they once try it, that my plan for harvesting barley is the best."

Florida as a Home for Northern Men.

Florida is attracting a fair share of northern emigration, and the tide will run hitherwards much stronger, as its merits are better understood. Previous to the war it had been little known to northern men, except as a resort for invalids in the winter. The war led a great many of our soldiers to pass the summer there, and afforded opportunities to become well acquainted with its soil, climate, and productions. It is not all swamp and sand, but has a good variety of soil, much of it fertile, and well-adapted to the crops of the Gulf States, and also to semi-tropical fruits. The climate is asserted by residents to be one of the healthiest, if not the most healthy, of all the States, and they bring statistics to prove it. This is probably true of the hammocks, and of the sandy portions, which contain the great bulk of the population. The temperature is quite uniform, and without the extreme and sudden changes, which make the seaboard Northern States so disagreeable, especially in the spring. Beside the staple crops of the South—cotton, tobacco, corn, sugar, and rice—it will produce, in the southern part, the pine-apple, banana, and plantain, and in all parts, the lemon and orange. The orange grows wild in the greatest luxuriance and health, and it is quite rare that a winter occurs so severe as to injure the trees. These wild trees make excellent stocks for the orange of commerce, and they only need grafting and cultivation, to produce fruit of the best quality, and in any desired quantity. Our northern men, and many of the natives, disappointed with their cotton planting, are now turning their attention to orange orchards, in which there is every prospect of success. We hear of this kind of enterprise in all parts of the State. Almost every landholder on the St. John has planted trees this winter; some by the dozen, and others by the thousand. At St. Augustine there are large plantations of young trees. In the interior, and on the Gulf shore, they are very busily planting, meaning to supply the Gulf States with this fruit in a few years. On Lake Griffin, a northern man has made a grove of 4,500 trees, by cleaning up a "hammock" of forty acres. The largest grove in the State, now in bearing condition, is on Indian River, and con-

tains about 1500 trees. This is known all through the State as "Dummit's Grove." There is no doubt of the success of this fruit, or of the financial success of any man of good business capacity and horticultural tastes, who will turn his attention to this industry. Almost all physical wants are easily supplied. Land is cheap, and stock need no shelter the year round. The Southern army for a long time drew a large part of its supplies of beef from this State. Pigs and poultry are at every man's door, and require little attention. With its climate and soil, Florida should supply us with most of our tropical fruits, and much other tropical produce. Coffee, tea, arrow-root, guavas, bananas, pine-apples, and cocoa-nuts, have all been grown within the State, with success, and probably only need fostering, to become established and staple crops. In our great seaboard cities, oranges, lemons, and bananas, are almost as cheap as apples. Florida can produce these and other tropical fruits in such abundance as to increase their consumption tenfold, and make them cheap the year round, in all our large towns and villages. This would be a great means of health to our meat-eating population, and Florida would be enriched by this addition to her industries. We wish the largest success to the emigrants to the State and the fruit planters.

Town and Local Agricultural Societies.

Local Agricultural Clubs, we believe, are quite largely on the increase. There are good reasons for the establishment of these societies. They do not, of necessity, and should never interfere with the County and State Societies. The local society has a good work to do in bringing together neighbors with their products. There can be no doubt that a much larger number will become interested in improved husbandry through these than through the larger societies. Meetings and exhibitions should be arranged for different seasons, not for the autumn alone. Spring exhibitions for the sale and exchange of seeds would be productive of much good. Sheep-shearing festivals, milking trials, implement tests, and other meetings, might be occasions of great utility and interest. A fall exhibition at the town center will draw out a full representation of everything within the borders of the town. Men who have fine cattle can take them to the exhibition without much exposure of the animals, or much pecuniary loss. They may also be brought back to their own quarters at night. These town fairs usually draw out a very good representation of all farm products, and it is not improbable that they may gradually work into periodical markets for the exchange and sale of grain, stock, fruits, vegetables, etc. Such fairs are of very great advantage in England, and we can see no good reason why they would not make a great saving of time in the exchange of products, prevent speculation, regulate prices, give the farmer a fairer reward for his labor, and make provisions cheaper to the consumers.

Butter a Great Source of Income.

In the report of the N. Y. State Agricultural Society for 1866, it is stated that the amount of butter produced in the State in 1855 was 90 millions of pounds in round numbers, and in 1865, 84 millions of pounds, showing a falling off of 6 millions of pounds. The cheese produced in 1855 was 38 millions of pounds, and in 1865, 72 millions, showing an increase of 34

millions, or nearly doubling in ten years. The milk sold increased in the same time from 20 millions of gallons to 29 millions. While there has been a very large increase in the production of the dairy districts, a much larger portion of the milk is sold in the cities and villages, and a still larger proportion is manufactured into cheese. This process has been going on in Ohio and probably in all the dairy States, though perhaps not in so marked degree. These figures furnish an important hint to those who are going into the dairy business. It is evident that we want more butter, and that for some years to come it will pay better than any other dairy product, except in the immediate vicinity of cities and villages. Do we not need butter factories now more than cheese factories? They are already started in Orange County, New York, and there is abundant room for more.

Commercial and Home-made Superphosphate.

Superphosphate should contain at least 10 per cent of soluble phosphoric acid, and if it be really "improved" or "nitrogenized," it should have 3 or more per cent of ammonia. An "ammoniated" superphosphate, examined by Prof. Johnson, contained 25½ per cent of phosphoric acid, (of which 2½ per cent was soluble) and 3½ per cent of ammonia, the calculated value being \$25.00 per ton. Another superphosphate was about equal to it, showing a value of \$24.00. One showed 10½ per cent of phosphoric acid, only 1 per cent of which was soluble in water. Its ammonia was 3½ per cent, and its estimated value \$16.50 per ton. Another was estimated at \$16.20 per ton, and the most famous, or rather infamous, brand then in use was shown to be worth \$41.00 per ton less than the price. We are confident that a very much worse state of things exists at present—having positive knowledge of articles sold at high prices which are not worth carting two miles. The manufacturers of these commercial manures ought to procure analyses of them from some well-known chemist in whom the public have entire confidence, and warrant their manures to be fully equal to the analysis. We who want fertilizers would then know what we were buying, and in case of fraud we should have our remedy. If this were done and the fertilizer were sold at a fair profit, there would be no occasion to make the article at home, for it can be made much cheaper upon a large scale.

Prof. Johnson gives the following directions for making superphosphate from Sombrero guano, and we believe them to be equally applicable to the best qualities of Baker's or Jarvis' Island guano, which is an article now in market: "The materials are 125 lbs. Sombrero guano; 32 lbs., or 2 gals., 1 qt. oil of vitriol; 16 lbs., or 2 gals. of water. The oil of vitriol may be weighed out, or, if this be not convenient, it may be measured out in a common 3 gallon earthen pickle-jar, which is converted into a measure by first filling into it two gallons and one quart of water, and making a deep scratch on the inside at the surface of the water.

"The oil of vitriol and the water being measured off are now to be mixed. This is done by pouring the acid in a slow stream into the water, with constant stirring. Neer pour the water upon the acid. In this operation earthen vessels are the best, but a tight wooden vessel may also be employed. The mixture becomes very hot and blackens wood. Care should be taken to avoid spilling the acid upon the clothes or flesh. This

better to transfer it by a ladle made of stout sheet lead or earthen ware than to pour it.

"The diluted acid being ready, it is to be used while hot. Half the contents of a bag of Sombrero guano is placed in a heap, and the acid ladled upon it, and at the same time intermixed with the help of a wooden stirrer. In this way a pasty mass is obtained, and with a little care, this one-half the guano will absorb the whole of the acid. After the mixture is completed, the remainder of the guano is sprinkled in, with thorough stirring, and in a short time the mass may be thrown out thinly upon a floor, and after standing a day or so, it will be a finished superphosphate, dry and fine, and ready for broadcast or drill sowing. On the large scale my detail of methods and results may doubtless be varied somewhat. A few trials will establish the right method."

If one wishes to make an ammoniated article, fish guano is the cheapest source of ammonia to add to the superphosphate. There is a fine-ground and dried fish guano, which contains ten per cent of ammonia, or its equivalent in readily available nitrogenous matter. Six hundred pounds of this guano added to 1400 of the superphosphate prepared according to the above directions would give three per cent of ammonia.

Stay on the Farm.

The cities and villages are already overcrowded, and every kind of business languishes more than the cultivation of the earth. In the cities the labor market is overstocked, and one can get any desired number of hands for any conceivable job. Clerks from the country have usually to serve two or three years before they can get living wages. The city throngs with unemployed men and women, waiting for something to turn up. Those who find employment have no security for permanence. Mechanics lose their places and have to lie idle for weeks and months together. All the products of skill and labor are relatively cheaper than provisions and breadstuffs. The great material want of the nation is cheaper meats, grain, and vegetables. We have merchants, mechanics, and middlemen enough, but far too few farmers. The best cultivated State abounds in uncultivated lands. Even in the vicinity of our large towns and cities, cheap lands abound, and splendid chances for enterprising young men to win homes and fortune. Once settled upon his own acres, the farmer has constant, profitable occupation before him. Nowhere is unskilled labor so sure of sustenance, nowhere will intelligent industry so surely win a happy home and competence. In the country one never need to lack labor, and labor brings there the necessities and comforts of life.

Breaking Prairie.

Wild prairie sod is very different from any green sward Eastern men are accustomed to see. It consists of the old and new, tough, dried, and decayed stems and foliage of many plants—many of which, indeed, are grasses, but in many places they hardly constitute the majority. There are weeds with roots as large as a man's arm, tangled vines, tough, low-growing shrubs, and plants of many kinds from mosses to scrub-oaks. In breaking up such a mass of materials, all well matted together, it is no wonder that farmers easily argued themselves into the belief that shallow breaking is best. It kills the weeds, and the sod rots, and it is ready for a crop the

next spring. A few years ago this subject was discussed in the *Agriculturist*, and a question was lately proposed to our readers, to draw out, if possible, new views. Three responses are selected, as showing the views of intelligent farmers. A Missouri farmer, "C. W. II.," writes:

"After several years' experience in the cultivation of prairie lands in Missouri, I am convinced that the best plan for breaking wild prairie land is to begin plowing in the spring as soon as the ground is settled. Use a team sufficient to break the sod three or four inches deep, and follow the breaking team with a good two-horse team, and plow, throwing the subsoil on top of the sod, covering it nicely with loose earth, making a first-rate soil to sow spring wheat, oats, or any early grain or grass. It may lie until May 1st; then plant corn or vegetables, and you may expect a good crop with little labor. The land will be in splendid condition for a crop next season. I have seen 40 bushels of corn to the acre raised on ground prepared as above, without any more work, when others raised little more than seed, planted in the common way. I have also seen osage hedge grown from the seed from three to four feet high, in one year, on land prepared as above, without any cultivation. Land so prepared is excellent for fall wheat. The advantages of thus preparing prairie are so obvious that details are unnecessary."

Lewis Benedict, Grant Co., Wis., after an experience of 17 years, says: "Commence breaking prairie as soon as the grass starts in the spring sufficient for stock to get their living, and break what you can until harvest—that is, in this latitude about the 15th or 20th of July—and what cannot be turned over by that time should lie until the next season. I tried breaking a part of a land after harvest that I had not time to finish before, and did not get half a crop the first or second year, and could see a plain difference in the crops six years after. It is best to break from 1½ to 2½ inches. I have found the thinner the better; tried several depths from 1½ inches to 8, and found the shallow breaking always the best. The turf rots much sooner, and brings better wheat. With deep breaking, the ground seems cold and lifeless, somewhat resembling fall breaking. After the first year, plow one inch deeper every year until a desirable depth is reached. In this section wheat is the most reliable crop to put in. Sow the next spring early—the earlier the better."

An Illinois farmer thus gives the result of his long experience: "The best time to break prairie is in June, but it will answer from about the middle of May to the middle of July, or at any time after the grass has got a good start, and before it has got its growth, for before that period the roots are more readily killed, and the sod rots much quicker. Break just as shallow as it can be done, and have all the sod cut up, say from one to two inches. If the ground is smooth enough to break as shallow as one inch, it is all the better. The main object in breaking up prairie is to subdue the sod in the most perfect manner in the shortest time. If it is broken deep, sufficient moisture is retained in the sod to keep the roots alive; these will turn and grow through the sod, requiring years to subdue them; but in shallow breaking the roots are all killed, and by September sufficiently rotted to harrow to pieces. The next plowing should be two or three inches deeper than it is broken, plowing the same way. If the locality is favorable for winter wheat, it will probably be the most profitable crop to put in. It should be sown in September, say from the 1st to the 10th, and thoroughly harrowed in (not

plowed). If the locality is not suitable for winter wheat, corn will probably be the best to put in for the main crop; but a small return must be expected, though sometimes a remunerative crop is obtained, as it requires no attention after planting until it is gathered. Potatoes often do well, as likewise pumpkins, squashes, melons, etc. Turnips generally do well. Should it be important to get as large a crop as possible the first year, the best way is to turn a double furrow, by first breaking the sod shallow, being careful to lay the sod flat and level, running the plow in the same furrow, some two or three inches deeper, thus covering the sod completely. This is an expensive way of breaking, and I think not as good for the land, as the sod is too long in rotting. The plowshare and coulters should be kept constantly sharp by filing every two or three 'rounds,' as sharp as the file will make it, to cut the perfect mat of roots below the surface. The share should be sent to the blacksmith every few days, to be drawn out thinner, thus saving the time of filing and the wear of the plow and file." W. A. S.

Summer Pruning or Pinching.

There is no one point in horticulture about which there has been more discussion than that of summer pruning, and those who advocate, and those who condemn it, stand in about the same relation as they did years ago—each the more confirmed in his own opinion. We consider it useful or injurious, according to the manner in which it is done, and the subjects upon which it is practised. To allow a tree to make vigorous shoots and then cut them away in summer, or to pinch the young shoots without any thought of the effect, so long as something is pinched, will, like all other haphazard work, be likely to result in serious injury. Summer pruning is done, in the first place, to regulate the form of the tree. Dwarf trees, especially, may be so managed by rubbing out a few needless shoots here, and stopping the growth of another there, that there need seldom be any pruning required. Nip out the growing point with the thumb and finger, and the branch will cease to elongate; but after a while the buds upon the shoot will push, and when these have made a few leaves, they must be pinched in the same manner. The growth from buds and grafts is often very vigorous; that from buds often runs up as a long, succulent wand, hardly strong enough to support itself, and with but little disposition to form side shoots. By pinching at the proper height, the buds along the sides will start, and with a little attention a low-headed, shapely tree may be had, that will not need to be cut to pieces in order to bring it into proper form when planted. Another use of pinching is to throw the tree into bearing. It is now a well-received opinion that whatever threatens the life of a tree tends to induce fruiting; hence we hear of trees being made to bear by hacking them with an axe, by root pruning, etc. When the development of the tree is arrested by pinching, it usually sets about making fruit buds, instead of leaf buds. In pinching dwarf pear trees, the shoot from the bud at the end of a branch is allowed to grow, and those starting along the sides of the branch are pinched back to three leaves. If shoots start from those that have been pinched, nip them back to two leaves. The leading shoot is shortened as may be desired, after growth is over. The formation of fruit buds upon dwarf pears and apples is hastened by pinching.



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PHARAOH'S HORSES.—FROM A PAINTING BY HERRING.—Drawn and Engraved for the American Agriculturist.

Chariots, and horses, and horsemen, made a great impression on those who viewed the destruction of Pharaoh's host, as described by Moses, and sung by Miriam. The inspiration of the scene led to the composition of one of the grandest poems ever written or sung. This song should be read with the description which precedes it, and a feeling of sympathy with the great leader and lawgiver of Israel, if not with the discontented mob of which he was the liberator. So read, it is certainly calculated to stir the wildest enthusiasm, and might well fill an animal painter with visions of horses such as nothing else could. These three heads, from one of Herring's famous pictures, are admirable as depicting fright and consternation in the horse. A frightened horse, of which man has lost control, and which is wildly exerting his great power without other aim than to escape some real or fancied peril, and without regard to dangers which may lie before him, is a grand as well as terrible sight. Such a horse, if he survives the frantic race which he runs, after, perhaps, kicking and shaking himself free from every trammel, is never the same horse again. His experience and views of life have changed, and sights and sounds have new meanings. The bridle must be strong, the harness secure; he

must always be controlled, and never trusted implicitly. Used thus, his days of usefulness may be long—but he will never again be reliable.

The Striped Bug.

The great enemy to squash, cucumber, and all other vines of the same family, at least in their younger days, is the striped bug. The little tormenter is so well known that it need not be described. It attacks the young vines as soon as the seedling plants break through the ground, and they have truly a "struggle for existence," which does not always end in the "survival of the fittest." If the vines can be protected until they have made five or six leaves, they generally are able to endure the attacks of these insects, though not always. The importance of this enemy is shown by the variety of means that have been proposed for his destruction. Covering the vines during their early growth is the only *sure* preventive we know of, but this is applicable only on a small scale. A square, bottomless box, made of foot boards and covered with muslin or millinet, with its lower edges well pressed into the ground, will keep off the bugs. The neat hand-glass advertised in March last would doubtless be still better, as it gives

more light. Mr. Gregory, the well-known squash raiser, after trying many things, relies upon plaster, or oyster-shell lime, which he considers of equal value. He objects to air-slaked stone lime, as it is apt to be too caustic, and injures the plants. The plaster or lime is applied by shaking it from a small, fine sieve, while the leaves are wet from rain or dew. The first application is made as soon as the plants show themselves, and renewed as often as washed off.

Mr. G. E. Hulse of Ulster Co., N. Y., makes a sort of "scare-crow," which he says he finds effectual. We think we have seen the same in use many years ago. He says: "Take a stick about three feet in length, fasten a string to one end of it and tie a bunch of paper to the other end of the string; place the stick in the ground, at an angle of about 45°, so that the paper will hang directly over the hill of cucumber plants, and the wind will keep the paper swinging, thus effectually frightening away the bugs. I use elder for sticks as they are easily trimmed."

C. S. Dewitt, Geneva, N. Y., writes: "I tried last year for the striped bug powdered White Hellebore, which I had bought for currant bushes, and with the very best results. My nearest neighbor had two hundred sashes of melons, and lost about 33 per cent by this pest."

The Monkey-Flower—Mimulus.

A species of *Mimulus* (*M. luteus*) grows all along our Pacific coast, and is also found in Chili; in its wild state it is pleasing enough but not particularly showy. So much does it vary, even in its wild state, that botanists have made several species of its different forms. It may well be supposed that a plant with such a natural tendency to vary, would, in the hands of careful florists, give rise to some marked varieties. Of late years it has received much attention, and the result has been the production of some most beautiful forms, all widely differing from the native ones. The engraving will give a good idea of the general appearance of these. They differ in the spread of the corolla, and in its texture, color, and markings. The ground color is usually some shade of yellow, which is dotted, and blotched with a rich purple or deep scarlet. The flowers even come double, with one corolla within another, as may be seen from our engraving in our Horticultural Annual for the present year; this variety, which is known in the catalogues as

Bull's *Mimulus, tigrinus fl. pl.*, is said by Mr. Vick to come always true from the seed. There seems to be no end to the names, and the catalogues have *M. punctatus, speciosus, variegatus, Harlequin, tigrinus*, and the like, but all garden varieties of one species. The *Mimulus* is a perennial, which, however, seldom stands our winters, and can only with certainty be kept from year to year in the greenhouse. As it is one of those perennials that bloom the first year from the seed, it is usually classed as an annual. The seeds are very small and should be sown with care; it often comes from self-sown seed. The plants need a light, moist, and rich soil, and should be placed where they will be partially shaded from our intense midsummer sun. For pot culture the varieties of *Mimulus* are very useful, and choice varieties may be propagated by cuttings, or by division. The old Musk Plant is a species of *Mimulus*, (*M. moschatatus*), and is prized by many for the peculiar musky odor of its foliage. It is a low-growing, rather trailing plant, and needs plenty of water and shade. Its flowers are not showy. We have two native species with small purple flowers, and which are rather weedy-looking plants. They grow in moist places, and are called *Mimulus ringens* and *M. alatus*.

An Oak Scale Louse.

A gentleman residing at Orange, N. J., recently brought us a specimen of English Oak, which presented the worst case of scale that ever came under our notice. The small scale insects are not so numerous upon a given space as we have seen the oyster-shell bark-louse, noticed in April last, their effects are much more marked. Around each scale the bark has swollen in



OAK SCALE LOUSE.

such a manner as to give the whole surface a repulsive appearance, not unlike that presented by some pustular skin diseases. The scale itself is less than a line in diameter, and very nearly circular. Most of the individuals appear

shiny black to the naked eye, but dark brown under a magnifier; these contain numerous eggs, while the yellowish scales mixed with them were empty or contained only dead remains. The tree—one of several oaks purchased and planted at the same time—is completely covered in the manner we have described. The engraving gives something the appearance of the twig, but fails to convey the repulsive look.



MONKEY FLOWER—MIMULUS.

We find that Dr. Fitch has noticed some scale insects upon some of our native oaks, but we cannot make his brief description apply to the present insect. London quotes the case of an oak which was cut down in the Bois de Boulogne (Paris), which from the description must have been similarly affected, but the name of the insect is not given. Our advice as to this tree was to cut it down before others became infested. We are glad to see a growing attention paid to the condition of our various ornamental and forest trees, as they are quite as liable to the attacks of diseases and insects as are our fruit trees.

Preparing for the Exhibitions.

That our horticultural shows, on the whole, do a great deal of good, we do not doubt; that the system of offering prizes for the best—meaning usually the largest—specimen of this or that, without regard to the way in which it was produced, tends much to the advancement of general horticulture, we very strongly doubt. A glance at the list of prize takers will show that year after year certain persons are sure to take the prize for certain things. Those who devote themselves to growing special fruits and

flowers will, of course, attain greater perfection than the novice, but the novice does not know that the fruits, etc., which have carried off the prize that he hoped to gain were prepared long beforehand for the exhibition. Prizes are offered, and people who know how, set themselves at work to win them. It is mainly a trial between experts, and as a general thing the amateur or commercial cultivator has no chance. An

illustration of preparing for the exhibition occurred within our knowledge: two boys, 10 and 13 years old, saw the schedule of a fair, and decided to try, one for the premium on beets, and the other for that on carrots. A few plants of each were assigned to the boys; they gave them plenty of room, fed them with liquid manure, and tended them daily. The consequence was that the premiums for the "three best beets" and "three best carrots" were awarded to these boys, to the exclusion of those who had probably grown an acre or more of either, and selected the best of their produce. Now, what these boys did is what must be done by any one who competes for prizes—he must prepare for the exhibition. If it is for the "best quart of strawberries," take a row that should yield a bushel, and after the fruit has set and is large enough to show whether it is perfect, pick off all but two or three berries to a stem. Mulch the plants, water them, coax them with liquid manure, and if the berries are ripening up too soon, put up a cloth to shade them. Doubtless a quart of enormous berries will result, that will take the prize. The committee will ask no questions, perhaps not taste of the watery, flavorless monsters, but the grower will go out as the prize strawberry cultivator. If contending for the prize on squashes, grow but one squash to the vine, feed it and water it, and a prize squash will result. The prizes for Dahlias and roses, and other flowers, are obtained in a similar manner. Pot plants are often "garnished," that is, the plant, whether fruit or flower, is made to appear more prolific, by skillfully attaching branches of fruit or flowers. We mention

The Grape Curculio.

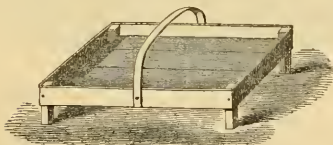
For some years there have been occasional accounts from some parts of the West, of injury to the grape by a curculio. No full account of this insect had been given until the appearance of the excellent Report of Mr. B. D. Walsh on the Noxious Insects of Illinois. Mr. W. has studied up the insect, and we give an abstract of his account and make use of one of his figures. The perfect insect is about one-tenth of an inch long, and of the shape shown in the enlarged engraving. It is black, with short, scale-like, white hairs, which give the black a grayish tint. The wing-covers are grooved and dotted as shown in the engraving. One of the distinguishing marks of this species is the coarse tooth upon the four front shanks. For



a more detailed description we must refer to Mr. Walsh's Report. In June the beetle deposits its egg in the young grape, leaving as its mark a dark, circular dot. The larva, when hatched, feeds upon the contents of the berry, which continues, to all appearance, sound and plump. The full-grown grub is almost two-tenths of an inch long, legless, yellowish-white, with a horny, pale brownish-yellow head. Late in July, or early in August, the larva drops to the ground, or the berry containing it falls from the bunch, and it makes its way below the surface of the earth, where it undergoes its transformation, and comes out a perfect insect in September. Where the females secrete themselves until the following spring is not yet made out. The accounts of the destructiveness of this insect come from Illinois, Ohio, and Kentucky; in the last-named State sixteen acres of vines in one place have been ruined by it. As it possesses sufficient powers of flight, grape growers should be on the look-out for its appearance. Mr. Walsh states that there are several parasites that feed upon its larva, and thus seem to diminish their numbers, and recommends jarring the perfect insects from the vines and catching them upon a sheet. When alarmed, as by a slight rap upon the vine, they drop even more readily than the Plum curculio.

Picking and Marketing Fruits.

When the small fruits begin to ripen, horticulture affiliates with commerce, and he who has heretofore given all his thought to raising fruit must now turn his attention to disposing of it. Much of the pecuniary success depends upon the way in which the fruit reaches the market. In the Eastern markets small fruits of most kinds are sold in baskets or other packages, holding nominally a pint or a quart; while at the West, they are sent to market in trays holding a half bushel, and are measured out to the purchaser. To several inquirers as to the best box or basket for fruit, we have not replied,



PICKING STAND.

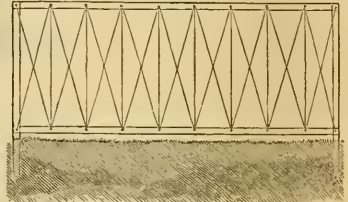
as the question is yet unsettled. It depends in a great measure upon local prejudices. Whatever package is used, it should admit of being well rounded up, so that when it reaches market it will be at least level full. A basket containing three-quarters of a pint, if it is well rounded, will be preferred by the majority of purchasers, to a full pint of fruit that does not fill the basket. Very few people have a definite idea of what a pint or a quart is, and a wide difference may be made in the capacity of baskets, without the inexperienced being able to perceive it. Until we have a law, or custom, which prescribes that fruit shall be sold by weight, the grower must observe the customs that people have made "a law unto themselves." Why cherries, currants, and grapes should sell by the pound, and strawberries, blackberries, etc., by measure, is not easy to perceive. We advocate selling by weight, but as all our people buy by measure, we must accept it. Picking of the small fruits is generally done by the piece—so much for the so-called quart. On large fruit farms, the succession of small fruits,

beginning with strawberries and ending with blackberries, furnishes employment for at least three months. We know of some establishments where the pickers are employed by the day, but this is where there is a class of women who are willing to do hoeing and other field work, and may be considered exceptional. The work is mainly done by women and girls, though boys and feeble men sometimes take a part. In fruit communities it is not considered "degrading" for any one, whatever his pretensions, to go into the field. And why should it be anywhere? A shanty or tent is put up in the field, as the headquarters of the "boss," and to shelter the fruit from the sun. The empty baskets are delivered from here and are received here when filled. Each picker has a stand like that shown in the engraving. It is made of the proper size to hold twelve baskets; besides these the picker usually takes as many more as she can bring back in her hand when filled. Each picker has her row assigned to her, and she is expected to pick it clean. A foreman passes along the rows occasionally to see that the work is properly done. The fruit is to be picked without the hull on, and the stem must be broken without injuring any fruit yet unripe. The fruit is to be assorted as it is picked, and all of under size or defective shape to be put into baskets by itself. When the picker returns with full baskets to headquarters, she is credited with the number of them on a check list, or receives tickets for them, according to custom. The one who receives the fruit puts the baskets into the crates, placing the poorer fruit in a crate by itself, to sell as second rate. The overseer of the whole work must see that no part is slighted, the fruit must be properly assorted, picked clean, and the baskets properly rounded. Sometimes the fruit is picked in trays and afterwards assorted and put into baskets; but this is an old way, and is not advisable, as it requires the fruit to be handled twice. Picking should not commence until the dew is off, and the fruit after being gathered should be sheltered from the heat of the sun as soon as possible. It should be so arranged that the picking of one day shall reach the market the next morning. This, of course, often requires night work, and there should be a sufficient force to carry out every part with promptness. All crates and packages should be plainly marked with the name of the owner, and, if forwarded by public conveyance, both that of the owner and consignee should be placed on the package. Baskets rounded full and a little pressed will reach their destination in better condition than those merely level full, where the berries have a chance to rattle by jolting.

Supports for Climbing Plants.

Annual climbing plants are general favorites; their graceful forms and often brilliant flowers add much to the beauty of a garden. They are a little more troublesome than other annuals, as some kind of support must be provided for them. At the iron-works stores various kinds of wire trellises are sold, but these are generally too expensive for most persons, and are too formal in design for any but highly kept grounds. A very common support is to plant a central pole, from the top of which are fastened numerous strings which at their other ends are attached to pegs driven in the ground in a circle, making a tall cone. The objection to

this is its formality, and that the vines become crowded above, just where they should have the most room. This seems to be the best way of growing the cypress vine, but for more robust climbers we do not like it. The support that pleases us best, as it gives the climbers a chance to follow their own sweet will, and arrange themselves in graceful and picturesque forms, is made from a young tree well furnished with branches. Cedar is best, but any other of the proper form will do, if the portion that goes into the ground be dipped in gas-tar, or solution of blue vitriol. Cut the limbs back to such a length as fancy may dictate, only avoid making the support top-heavy. Whatever support is used, it must be set firmly in the ground. It should not be forgotten that the



SUPPORT FOR CLIMBERS.

mass of vines that will cover it will offer a broad surface to the wind, and if not firmly set, the whole will be apt to go over when the vines are just in their prime. Trellises for such low growers as Sweet Peas, Nasturtiums, etc., may be made in various ways. Where formality will not be an objection, a modification of the English pea hurdle will answer. Cross bars, pierced with holes, are nailed to uprights, and through the holes twine is drawn, in the manner shown in the engraving. The length and strength of the parts will be governed by the plants for which it is to be used. Those for peas are made of two-inch stuff. It is best to wet the twine before it is put on, as it shrinks and slackens less afterwards. These, if the portions in the ground are protected from rotting by gas-tar, may be preserved for several years.

The Grape Vine—How it Grows and What to Do with it.—5th Article.

Last month we extended our vine until it bore four upright canes, but this is not enough for a well-established vine, and in order to get a greater amount of bearing wood a little different course must be followed. Having our vine, figure 8, with two well-grown canes, we will first show how it is managed on the Horizontal-Arm and Spur system of pruning. This is sometimes called Fuller's system, probably because Mr. F. gives preference to it, and clearly explains it in his excellent Grape Culturist; but we are quite sure he makes no claim to having



Fig. 11.—ARMS BENT DOWN.

originated it. The two upright canes in the figure are to be pruned at the length of four feet, as shown by the cross line. These canes are to be bent down to form horizontal arms, from the buds of which upright, fruit-bearing shoots may grow. We assume that a trellis of some kind has been built, and that the lower

wire or bar is a foot or eighteen inches from the ground. If these arms were to be brought to a horizontal position, and tied there at once, the buds would start unevenly. Though in a horizontal position, the buds nearest the ends of the arms are still upper buds, and are quite apt to take the advantage of those nearer the stem.



Fig. 12.—DOUBLE ARMS WITH SINGLE CANES.

To ensure an even breaking, or starting, it is better to curve the ends of the arms downwards, and not tie them to the trellis until the shoots have made a growth of two or three inches, as in figure 11. In tying the arms, observe care not to break the tender shoots, and use willow twigs for fastening; do not tie too tightly, as the arms are expected to increase in diameter. On each arm, from four to six canes are to grow, according to the variety; those with large foliage requiring more room must have the canes farther apart. The shoots desired for canes should be from the upper side of the arm, if possible, but if from any accident this is not practicable, one from the under side may gradually be trained up. All other shoots are to be rubbed off. As these upright shoots grow they must be carefully tied to the trellis; they will probably set few bunches of fruit each, but one of these, or even two, if not a very vigorous vine, should be removed to prevent the common injury of overbearing. The shoots, during the summer, are to have the same care in pinching laterals, removal of insects, etc., as we have already indicated, and when they have reached the height of about two feet, the top, or growing point, is to be pinched. There is much objection by some, to this summer pinching. The reason

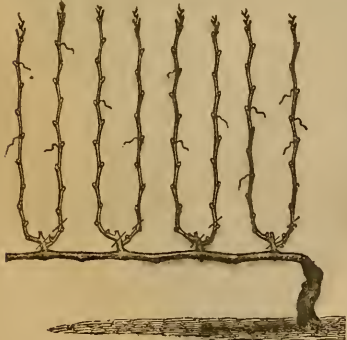


Fig. 13.—VINE WITH DOUBLE ARMS.

for it is the same as we gave for pinching the laterals—it produces greater health and vigor in the remaining foliage, and enables it the better to resist disease; the forces of the vine which would be expended in prolonging the shoot, are diverted to other uses, among which is the better nutrition and development of the fruit.

If all has gone on well, the vine at pruning

time will have the appearance shown in figure 13—two horizontal arms, each bearing six or less upright canes. In the figure, one cane has the fruit left on, merely to show the place in which it is borne. If it be desired to keep the vine in this form, each upright cane is cut back to a single bud; but usually two canes, instead

of one, are grown, and from what has been before said, it will be readily seen that this may be effected by cutting the canes back to two buds. This will leave the vine, after it is pruned, with two horizontal arms, along which are a row of upright stubs, called *spurs*, which have two buds upon each. The next year after the arms are laid down, if this kind of pruning has been done upon the vine, it will

throw up two shoots where one stood the year before. These will bear fruit, and during the summer require the same treatment as that indicated above for a single shoot. In autumn the vine will appear differently, and present to the pruner two canes instead of one; figure 13 gives a portion of an arm of such a vine. In pruning at this time, the object is, to so treat the vine that it shall continue to produce two



Fig. 14.

shoots and no more from each spur. The pruning for each cane is just that described last month for treating a young vine, to make it produce only two canes—cut away one cane altogether, and shorten the other to two buds. The manner of doing this is shown in figure 14, in which the parts are given larger than in the preceding figure; the cross-line shows where the cut is made to remove one cane entirely. The pruning is done in the same way, year after year, observing to alternate at each pruning the side from which the cane is removed. If the left hand cane is taken away this year, remove the right hand one the next. With weak-growing varieties it is advised by some, not to lay the arms down the full length at once, but to lay down an arm for a third of the length, and the next year extend it by laying down as much more of the canes at the extreme ends of the arms, and so on, these canes having been allowed to grow four or five feet long and trained in an inclined position for the purpose.

The arms need not be taken from as near the ground as above described, but may be started at any convenient height, on a vigorous vine, all buds below being, of course, rubbed off. This allows vines to be grown in tiers, one above the other. A single arm, where circumstances require it, can be grown as well as a double one, by laying down a single cane instead of two. These are the main features of the Horizontal-Arm and Spur system, which is one which has its opponents as well as its advocates. Where well followed out, it has been, so far as we have seen it, successful; neglect is fatal to it.

LIMA BEANS.—The dried Lima Bean always brings a good price in the market, and the supply is often quite short of the demand. Ten

dollars a bushel is not an unusual price for the beans. We do not know of any instances where they have been grown on a large scale, and cannot tell the yield per acre; but think that it is a crop that offers fair inducements for some to make a specialty of it. A rich, gravelly loam best suits them. Plant in hills, four feet apart each way, setting first a pole about eight feet high in each hill, and pressing the beans into the soil, eye down. Put ten beans to a pole, and cover an inch deep, and if all grow, thin to four. If they are rotted in cold rains, replant. Give good cultivation until the vines shade the ground. Near a market it will be more profitable to sell the beans green, but those away from large towns can allow them to ripen, and send them to market at their convenience. It is a common practice to pick the beans green, shell, and dry them. They meet with a ready sale, except just when green ones are fresh. They are soaked until plump, and sold in the condition of green beans, in our city markets.

A Weeding Hook.

The readers of the *Agriculturist* are indebted to Mr. J. Fink, of Baldwinsville, N. Y., for a number of useful contrivances, and he now sends us a drawing of a weeding hook, which he and his neighbors have found very efficient in the garden. Figure 1 shows the shape of the blade, which is 4 inches long (exclusive of the shank), $\frac{3}{4}$ inch wide at the base, and $\frac{1}{4}$ inch wide at point.

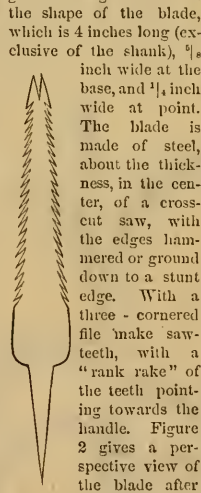


Fig. 1. being bent and



Fig. 2.

mounted in a handle. Mr. F. finds that a tool of this kind takes a sharp hold upon weeds and is very effectual in bringing them up by the roots.

PRUNING EVERGREENS.—Our common evergreens, Spruces, Firs, Hemlocks, and Arbor Vites, may be pruned with as much freedom as deciduous trees, and brought into any desirable shape. To get a dense, green pyramid, always keep the lower branches longest. The new growth may be shortened-in in summer. In cutting, some care should be exercised, especially with the spruces and others that push large, vigorous shoots. These should be severed with a sloping cut from below, which will show much less than a square cut. Hemlocks are most patient of shearing, which may be done while the trees are in full growth.

Spruces, Hemlocks, and Firs.

Among the Spruces, Hemlocks, and Firs, are found most of the really popular evergreens for general cultivation. Our own woods furnish some of these, and several from other countries make themselves quite at home in our grounds. The Hemlock is readily recognized, but to many persons it is not easy to distinguish a Spruce from a Fir. The catalogues and books are bothersome, as there we find the botanical names *Abies*, *Tsuga*, and *Picea*, and used in different ways by different authors; and even botanists of reputation are not agreed in their application of names. A more extended knowledge of these trees has shown that the characters upon which they were divided into the three genera mentioned above, were not to be relied upon, and in his new Book of Evergreens, Mr. Hoopes has very properly placed them all under *Abies*. He makes three divisions of the genus: 1, the True Spruces (*Abies* proper); 2, the Hemlock Spruces, (*Tsuga*); 3, the Firs, (*Picea*). The most

to five, and the cones, which ripen the same year the trees blossom, while in the Pines they do not mature until the year after. The Spruces have their leaves pointing in every direction, and pendent cones; the cones of the Hemlocks

favor, and he gives an account of seventeen varieties of this most popular tree. The beautiful Menzies' Spruce (*A. Menziesii*), though successful with him is often injured elsewhere.

The Himalayan Spruce (*A. Smithiana*), fig. 1, is as uncertain as it is beautiful, and can be raised in the latitude of Philadelphia only with the greatest care. Our author is decided in his preference for the native Hemlock Spruce (*A. Canadensis*), fig. 2, which he considers, and justly too, according to our notion, as the evergreen of evergreens. Douglass' Spruce (*A. Douglasii*), is in the same list with the Himalayan, satisfactory sometimes. Among the Firs, the Balsam Fir (*A. balsamea*), fig. 3, gets faint praise; the young plants are beautiful, but the old ones are shabby. The Cephalonian Fir (*A. Cephalonica*); Nordmann's Fir, (*A. Nordmanniana*); Great Silver Fir (*A. grandis*); the Siberian Silver Fir, (*A. Pichta*); and other less common species, are commended for general cultivation. All lovers of beautiful trees, and their number is rapidly increasing, will find Mr. Hoopes' work a most interesting



Fig. 1.—*ABIES SMITHIANA*.

are hanging down, but the leaves spread in two directions, and appear as if placed in two opposite rows along the stems; in the Firs, the leaves seem to be more or less two-rowed, but the cones are erect, and their scales fall away when ripe,

while in the cones of Spruces and Hemlocks the scales remain. We are glad that Mr. Hoopes has placed all these trees under one generic name, as nurserymen and cultivators need not hereafter be bewildered with *Abies* and *Picea*. Mr. Hoopes gives an account of the hardness of the different species, as well as their other qualities, derived from his own experience and his observations in the collections of others; so that the work, while it aims at scientific accuracy as far as names and descriptions go, is nevertheless exceedingly practical. The common White Spruce (*Abies alba*) comes in for a just share of praise, while its brother, the Black (*A. nigra*) is not recommended, on

account of the unsightly character of the tree when past its youth. The Norway Spruce (*A. excelsa*) is, of course, high in the author's



Fig. 2.—*ABIES CANADENSIS*.

obvious differences between the plants of this genus and the Pines are the single or scattered leaves, which in the Pines are in clusters of two

one. It is the only work published in this country that gives the latest experience with evergreens, and is fuller than any foreign one.



Fig. 3.—*ABIES BALSAMEA*.

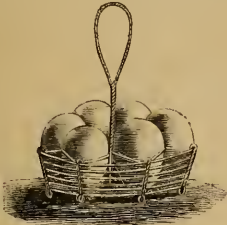
one. It is the only work published in this country that gives the latest experience with evergreens, and is fuller than any foreign one.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

A Wire Egg Stand.

The engraving shows a convenient and neat arrangement for cooking eggs. The eggs may be placed in the stand and put into the water and removed all at once, while the same contrivance which has aided their cooking will serve to place them properly upon the table. There is scarcely anything upon which people are more fastidious than the manner of cooking eggs. Some like them hard all through. Others follow the old three-minute rule,

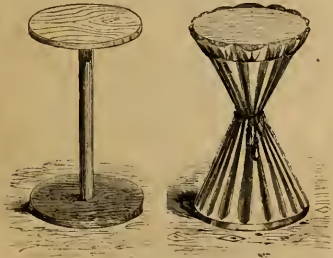


STAND FOR BOILING EGGS.

which keeps the eggs in boiling water for three minutes by the clock or egg glass. This makes the part near the shell overdone, and leaves the center nearly raw. Our way is to put the eggs into a saucepan of boiling water, which is immediately removed from the fire, but kept hot for five minutes after putting in the eggs. They will then be nicely and equally cooked all through. The stand here figured will allow all the eggs to be cooked alike, whatever may be the preference as to style. It is to be had at the city house-furnishing stores.

Household Ornaments.

FLOWER-GLASS WORK STAND.—The following, contributed by Mrs. Annie M. Brown, of Jefferson Co., Iowa, is familiar to many of our readers, but will be new to many others: "Almost any one who can work with an edge tool can make the frame of the stand. No matter if it is rough, only construct it so that it will set firmly. To insure this, have the bottom made of $1\frac{1}{2}$ inch oak plank, the top of one inch pine, or other light lumber (fig. 1). The



Figs. 1 and 2.—STAND UNCOVERED AND COVERED.

material used for the cover of the stand can be of furniture calico, plain worsted goods, or damask, to suit one's fancy or convenience. Cut a circular piece just fitting the top of the stand, and to this sew the skirt, as we shall call it, without gathers. The skirt should be long enough to reach a little under the foot of the stand, and may be confined there by a draw-string around it, or fastened around the circular foot by brass-headed tacks. The simple cord with tassels, that is tied around the middle and binds the cloth in fluted folds, gives grace and beauty to the stand. To convert this into a work-stand for the sitting-room, whose ready pockets shall hold grandmother's knitting work, mother's variety of work, and Minnie's crochet work, you have only to take a strip of the cloth, in length one

and two-thirds the circumference of the top, and from nine to twelve inches in width; gather this until it fits the circumference of the skirt, and sew it around it as far from the top as the strip is wide; now loop this up to the top at intervals, to form the pockets, sewing up between each loop to make the divisions. Figure 2 shows the stand complete.

HARP CARD CASE.—(Annie M. Brown, Jefferson Co., Iowa.) Take a piece of heavy pasteboard, 12

or 14 inches square, draw on it the figure of a harp, and with a sharp penknife cut it out, leaving narrow strips in imitation of the chords of a harp, and leaving also one cross-bar near the top to hold it firmly together. To form the rack, cut out of pasteboard, not so heavy as the first, scooped or fan-shaped pieces, $1\frac{1}{2}$ inches across, 16 or 18 in number. Cover these and the whole harp, except the chords, with delicately tinted paper pasted on. Cover the chords with strips of gilt paper. Paste a narrow binding of gilt around each scollop and around the margin of the harp. Now, sew these scooped pieces on either side of the harp, from the top downward, lapping partly on each other as seen in the engraving. Cover the stitches of the last two put on by a small rosette or bow of ribbon. A bouquet of gilt flowers may be pasted on the vacant space at the bottom, and a sprig on either side at the top. To produce a richer effect, scollop shells, readily obtained near the sea, might be used in lieu of the paper scollops.



Fig. 2.—CARD-RACK.

Household Talks.

BY AUNT HATTIE.

"Don't you put pepper and salt on your meat before roasting?"—Never, on a joint of mutton or a piece of beef or veal; but I consider it a great improvement to rub a little salt on pork. I make this distinction because my experience has tested its value, and I know that all good meat cooks do the same. Salt hardens and toughens meat, and consequently would spoil beef or mutton; but pork is so tender that its effects are not perceptible, and the flavor is much improved by the addition. Pepper I reject entirely from all kinds of roast joints of meat, unless a forcemeat is made, when I use it, of course.

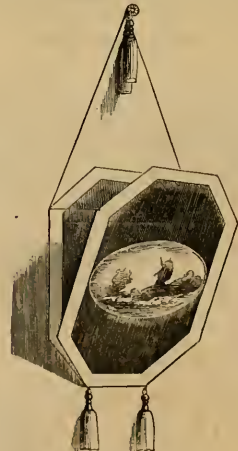
"I notice that you have no water in the pan."—Certainly not; if it were not a reflection on so many thousands of good housekeepers, and upon you also, I should say a more ridiculous practice never was introduced into the art of cookery. Why do you put water in the pan? You say—"to keep the meat from burning on the bottom, and also to baste with." Ah! yes! I see that is the idea with all who advocate this method. Now, to end the controversy, let us see what the dictionary gives as the meaning of this word. Here it is—"Baste—to moisten meat with butter or fat in roasting;"—nothing about water, you see. My way is this: I wash the joint, and wipe it dry, then place on a clean pan, with the fat and skin side up, put it into a hot oven and leave it there until the heat has started enough of the oil of the fat to baste with, when I draw the pan towards me, to take up a spoonful of grease and pour over the meat for a few times, when I close the door immediately; this should be done four or five times during the roasting process. When it is of a rich, dark, and beautiful brown—which for this joint, you see, has taken about an hour—I take it from the pan and place on a warm platter, skin and fat side up again. Then I pour this grease from the pan into my dripping pot, being careful to keep back with a spoon this rich brown juice, which has exuded from the meat. This remaining gravy I leave in the pan, placing it on the stove, and adding about a gill or wine-glass full of water. Let it come to a boil, and then pour it over the meat. Be very careful that the platter is quite warm, that the gravy may not be chilled. The plates, also, for a properly served joint should be well warmed, but not made hot enough to burn the fingers or the table-cloth.

Salt and pepper and catsup may be added to the gravy while being made, if preferred, but never on any account put flour to the gravy of beef, mutton, or pork; always do so for chicken and veal gravy. "What nonsense!" you say, "I see no reason for making such a distinction." Yes! but, my dear madam, there are several good reasons for the difference, which we will not discuss at present.

"How do you like my new newspaper holder?" It is very simple, and easily made. I found in my attic two square pieces of pasteboard; when I went to the city I bought a sheet of black enamel paper which cost 8 cents, and 7 cents worth of gilt bordering, 4 tassels and 4 yards of thin cord for 50 cts. I found in my collection of paintings a pretty landscape, which I took also for this purpose; then I made a little flour paste in a tin cup, and was ready to make my holder. The two pasteboards were square and exactly the same size, and I cut from each corner an equal piece, making two octagons. One I laid on one side for the back. The other was covered first with the black paper, using the paste to stick it smoothly; when dry, the gilt border was added, and then I pasted the picture exactly in the center. The back was finished in the same manner, placed even with the front, and fastened to it with the cord, as in the engraving.

My little girl received from her grandma a very beautiful head of a doll, for her Christmas present. I made a nice body for it, and she enjoyed its society immensely, but one morning she came crying and holding in her hands the head completely severed from the neck. At first I supposed it utterly spoiled, but after thinking awhile I concluded that it could be mended. I always keep a bottle of china cement, which I find convenient for piecing ornaments, and crockery which will not be used in cooking. After applying the cement I lined the neck and head with a thick coating of good glazier's putty. It took a week to dry, and is apparently as firm and strong as ever.

What a splendid teacher experience is, and more especially in the management of children! Strange what a difference between the treatment of the first child and the fourth or sixth! Our first, from the time he was a month old, gave us no peace until after he was over two years. We never thought of a wakeless night, and three out of every week Ed-



NEWSPAPER HOLDER.

ward and I and the girl would be up rocking, and tossing, and swinging, by turns. We never talked, or even whispered, while he slept, for as certain as we did, as certainly would he wake again, and an hour or two would be spent in getting him to sleep. We offended both grandmas dreadfully because we would not listen to their mature experience. We starved and stuffed him by turns—had the doctor every other day, and sometimes twice in one

day, if he happened to roll his eyes or kick a little differently from usual. We never went to bed without the wash boiler being filled and a good fire under, in case of croup, though as I look back upon it I cannot imagine what our idea of the proper treatment of croup could have been, or why we should have considered such a thin, active, and bony child a fit subject for that disease. We always let him have his own way, and when he was old enough to eat milk and bread, he invariably finished his meal and returned thanks at the same time by deliberately throwing his bowl on the floor. Before he was 18 months old he had broken two or three sets of breakfast cups and saucers, any quantity of bowls, and all the pieces of a pretty cottage set of china, excepting two bread plates. We bought for him a beautiful carriage, in which he never could be induced to ride, but which he insisted upon pulling and pounding until he had spoiled it altogether. Affairs were in this state when his kingdom was usurped by another addition to the family, and my eyes were opened to the necessity of reducing the exuberance of his spirits, and of establishing some system of law and order. The struggle was tremendous, and, as the Gipsy woman would say, many were the whackings I gave him, until finally he was brought under subjection, and now sets a tolerably good example to the younger children. 'Tis cruelty to a child to neglect his training until he is a year or even six months old. When old enough to know his mother, it is old enough to know that when she says no, the command must be respected, and I never find it necessary to more than punish by a gentle pat on the hand, admonishing at the same time by saying "no! no!" or "Georgie mustn't." I don't think my youngest child has broken three pieces of crockery of any description during the three years of his life, and when I say "no," he turns away immediately from any coveted object; and all this important change in my domestic government I attribute to a little, or perhaps I should say a good deal, of experience. I often think how much severe discipline I might have spared my oldest boy—how much care and anxiety myself—how much uneasiness the two grandmas—how much the health of the child himself might have been benefited—had I been a little more humble, a little less nervous, and a little more willing to listen to the experience and advice of my own and my husband's mother.

Making a Cool Box.

An ice-box or refrigerator is unquestionably the best thing for families in city or country, where ice-houses are accessible, or where ice is distributed regularly in small quantities. But many farmers have not learned the economy of an ice-box, and have no facilities for supplying an ice-box. To such, the contrivance recommended by our correspondent may be of great value for keeping butter, cream, meats, and fruits, cool in summer. ("Rev. G. A.," of Minnesota, writes: "I dug a hole in a corner of the cellar, three feet by two, and two feet deep. Then from a quarry near by, I selected five smooth, flat stones, with straight edges. One stone formed the bottom, another the back, projecting above the cellar floor six inches, another the front, projecting one inch. The two ends, fitting in between these, kept them in place. The ends at the top, not fitting quite close to the back, I wedged in a piece of studding, to which, with the hinges, I hung a cover. Then, with a piece of shingle for a trowel, I filled with cement the joints of the stones, and the work was done. My wife white-washed the box and cover, which application is frequently renewed. In this box is perpetual coolness, and butter made from cream kept in it, 'comes hard' the hottest day of summer." It is not every locality that furnishes the smooth, flat stones. If these are not at hand, brick might be used, or rubble stones of suitable size for the bottom and sides of the box, the inside to be lined with a coating of cement. Or if these are not convenient, a box of wood might be made of suitable size, and buried in the bottom of the cellar to within

a few inches of the top. The wooden box would not last as long as the stone, or the cement, but the temperature would be the same, and it would pay for itself many times over every season.

Guesswork in the Household.

"Good morning, Mr. Smith. Can you tell me the road to Boston?" "How did you know my name was Smith?" replied the man addressed, standing somewhat on his dignity. "I guessed it," was the reply, and the guesser was pluming himself on his shrewdness. "Guess your way to Boston then," came the gruff rejoinder, which at once convinced him that guessing was a guide not always to be trusted. Probably the Yankee nation, (they are not confined to New England) are as shrewd at a guess as any other people, which perhaps has led them to overdo the matter, and "guess," or "reckon," or "calculate," when a certainty could easily have been ascertained. A case in point, considerably affecting domestic economy, is the uncertainty of measures and weights used in the household. From time immemorial, cooking recipes have been followed out by "cupfuls," and a "pint to the pound" has been the standard of weight. The pint for the pound has been usually ascertained by a tumbler, supposed to hold half a pint. In many cases such estimates may answer, but in the delicate matter of getting things just right, they will more frequently disappoint. Many a spoiled jar of preserves, and loaf of cake have resulted from "guessing" at the proportions. A good scale for weighing would remedy all this, and serve many other useful purposes. The heaviest eggs can be selected for setting; the weight of the fat chickens be ascertained to a notch; the pounds of honey yielded by the bees be known; the weight of the baby be noted; the pounds of butter sent to the store be made sure of; and, not less important, the honesty of the storekeeper be tested by weighing the coffee, tea, sugar, etc., brought home. In a hundred ways the housekeeper will find a good family scale superior to any amount of guessing, in each of which, except perhaps in weighing the baby, money enough to pay for the instrument may be saved—and in the exceptional case, there will be no little satisfaction, especially if it be the first baby. Recent improvements have been made in scales, giving a far more convenient article than the old-fashioned steelyard or the hanging spring balance, which should be looked after by the good man who desires to thoroughly furnish his house with labor-saving and money-saving appliances.

More about Salad Dressing—Lettuce.

A correspondent, "Saladin," writes as follows: "The article on salad dressing, in the May number, gives good directions for making one kind of dressing, called 'Mayonnaise,' and which to my notion is better for mixed salads, containing chicken, lobster, meat, etc., than for those purely of vegetables, though I sometimes use it for these. I may remark, that in making the dressing referred to, perfectly good butter is much better than any but the very best oil, which quality is seldom to be found outside of large cities. Melt the butter at the lowest possible temperature—by no means fry it—and use as directed for oil, stirring the mixture in a warm place. Perfectly sweet cream may also be substituted for oil. Lettuce may be considered as the universal American salad. I wish our people would get into the way of using more salads. The vegetables you mention are all good, but you omit two of my great favorites, potatoes and string beans. But I will just now confine myself to lettuce. The use of oil is objected to by a large number of people, perhaps by the majority, from some prejudice, probably derived from the recollections of their early experience with a certain medicinal oil; hence at most tables in the country, lettuce is eaten dressed with sugar and vinegar, with a little salt, and perhaps a dash of pepper, or some peppercorn, to give it piquancy. This is

an old English way, not to be despised for a variety, and is very acceptable at breakfast. It should be prepared only the moment it is to be eaten, as the vinegar causes the lettuce to wilt, and one of its charms, its crispness, is lost. But for the regular lettuce salad, pure and simple, the lettuce is to be washed, and well drained, then thoroughly moistened with oil and vinegar, and a little salt added. The old rule is: "Be prodigal of oil, prudent with salt, and parsimonious with vinegar." The amount of vinegar will depend upon its strength and one's taste. Of really good vinegar I use one spoonful to three of oil. Stir in a large bowl with a wooden salad spoon until every part is well moistened. This is my favorite way, and furnishes a groundwork for a large number of variations, by adding chives, tarragon, celery, slices of olives, or whatever may be chosen to flavor it with; hard-boiled eggs in slices are often added. Lettuce forms the basis of many other salads. With bits of cold beef, mutton, veal, chicken or other fowl, and plenty of lettuce, a series of most excellent dishes may be formed, and with these I best like the dressing you have given. Now, in return for all this salad talk, will some of your German readers give me a good recipe for herring salad? Don't laugh, my Yankee friends; I know that herring salad is a good thing, and I wish to know just how it is made best."

Bottling Strawberries.—While the strawberries are being picked over and the stems removed, a quantity of juice will drain from them. This should be placed in a porcelain-lined kettle, with the desired quantity of sugar—a little over a quarter of a pound to a pound of fruit is sufficient for most tastes. Let this syrup simmer a little, and add the fruit. Let the whole come to a boil, and as soon as possible after it boils all throughout, bottle or can, completing one at a time. Glass bottles should first have a little warm water put into them, to warm them and prevent the bottle from breaking. This is, of course, to be poured out before the fruit is put in. Every bottle should be full at the time of putting on the lid; when cold, the contents will have shrunk considerably.

Bottling Raspberries.—Red raspberries are the best for this purpose. Proceed in the same way as for strawberries. If no juice runs from them, add a little water, or place the dish of fruit on the back of the stove, and the juice will soon start. Many use water always, though they will be much richer without. A little red currant juice added is a great improvement.

Raspberry Vinegar.—Use red berries, and to two quarts, add one quart of good vinegar. Let it stand 24 hours. Strain through a flannel bag, and pour the juice over two more quarts of fruit; let it stand as before, and strain again. Allow three-quarters of a pound of loaf or good white sugar to every pint of juice. Strain well, and place in a stone jar, and cover. Set the jar in a kettle of water, and let it boil until the sugar is dissolved. Bottle for use. A tablespoonful to a tumbler of water makes a pleasant drink for invalids, or for any one in the intensely hot summer months.

To Have Vegetables of a Good Color. put them into boiling water, and let the water boil, but allow no lid on the kettle. Peas and asparagus, especially, are kept of a fine green color by this treatment.

Crumpets.—Mix a quart of flour with new milk and a little salt—making a batter—add a tablespoonful of brewers' yeast, or a half tumbler of home-made yeast. Beat thoroughly two eggs and add to it; set in a small crack by the fire. When well risen, should be baked in rings in an oven or on a large griddle.

To Cleanse Ribbons.—Allow an equal quantity of soft soap made of wood ashes, (prepared lye soap will not do,) honey or molasses, and alcohol or common whiskey; mix well together. Spread the ribbons on a table, and rub briskly with the mixture. Rub thoroughly, and iron while damp. Do not rub with the hands, or wring, but gently squeeze the water from them.

Lamp Chimneys often crack from being fastened on too tightly. The screw is applied while the chimney is cold, and often so tightly as to prevent the glass moving at all. Of course, when the chimneys are heated there is no room for them to expand, and consequently they must crack. Always see that the glass is secure, and at the same time moves easily in the holder.

BOYS & GIRLS' COLUMNS.

Wanted—A Boy with Ten Points.

1. Honest. 2. Pure. 3. Intelligent. 4. Active. 5. Industrious. 6. Obedient. 7. Steady. 8. Obliging. 9. Polite. 10. Neat. One thousand first-rate places are open for one thousand boys who can come up to the standard. Each boy can suit his taste as to the kind of business he would prefer. The places are ready in every kind of occupation. Many of them are already filled by boys who lack some of the most important points, but they will soon be vacant. One is in an office not far from where we write. The lad who has the situation is losing his first point. He likes to attend the circus and the theater. This costs more money than he can afford, but *somehow* he manages to be there frequently. His employers are quietly watching to learn how he gets so much extra spending money; they will soon discover a leak in the money drawer, detect the dishonest boy, and his place will be ready for some one who is now getting ready for it by observing point No. 1, and being truthful in all his ways. Some situations will soon be vacant, because the boys have been poisoned by reading bad books, such as they would not dare show to their fathers, and would be ashamed to have their mothers see. The impure thoughts suggested by these books will lead to vicious acts; the boys will be ruined, and their places must be filled. Who will be ready for one of these vacancies? Distinguished lawyers, useful ministers, skillful physicians, successful merchants, must all soon leave their places for somebody else to fill. One by one they are removed by death. Mind your ten points, boys; they will prepare you to step into the vacancies in the front rank. Every man who is worthy to employ a boy is looking for you, if you have the points. Do not fear that you will be overlooked. A young person having these qualities will shine as plainly as a star at night. We have named ten points that go toward making up the character of a successful boy, so that they can be easily remembered. You can imagine one on each finger, and so keep them in mind—they will be worth more than diamond rings, and you will then never be ashamed to "show your hand."

Presence of Mind.—An English writer relates the following incident. A lady was in front of her lawn with her children, when a mad dog rushed toward them pursued by several men. Most persons would have screamed and done nothing, or at once taken to their heels and left the poor children to their fate. Not so this mother. Nerved to resolution by love of her children, she walked straight toward the dog, received his head in the folds of her skirts between her knees, and held it with all her might until the men came up and secured it.

Ways of Getting a Living.



THE BLIND PIPER.

One of the first thoughts of a person coming from the country to New York, and seeing the crowds of people who throng the streets, is, "How do they get a living?" To answer this fully would require large volumes. There are hundreds of ways of making money in a large city, which, fortunately, are unknown outside of its limits. We have prepared illustrations showing some of these that may interest the young readers of the *Agriculturist*. The above is a correct portrait of a blind piper that has been regularly seen in the streets of New York for many years. His favorite resting-place is on the stone coping of the railing around Trinity Church, on Broadway, at the head of Wall Street. Usually a little girl sits by him to receive the pennies that may be dropped by the compassionate passers. The sound produced by his playing on the bagpipes is execrable. Filing saws would be

music compared with it. When performing, he twists and works his body convulsively, and it might reasonably be thought that the sounds brought out from his instrument were the voices of the aches and pains tormenting his poor body. Of course, such a spectacle excites the pity of the beholders, and that pity is worth to him probably several dollars per day. We do not know how much he has realized by his performances, but probably considerably more than if he had played passably well, and left out the accompanying contortions with which he plays on the public as well as on the bagpipes. At any rate he makes a living, and looks able to blow for years.

Who First Lived in America?

Perhaps only such Indians as were found here by Columbus and those who followed him were the aborigines of America, but discoveries are continually coming to light that point to races of men superior to savages. The following account of a recent occurrence is given by the Knoxville Press. "Mr. William Staples owns a valuable farm on Poplar Creek, about twelve miles north-east of Kingston. For many years past attention has been attracted to a particular locality on his farm, from the fact that the cattle were in the habit of resorting to the place, and making thereby what was known as a 'lick.' The attention of Mr. Staples being thus called to the subject, he resolved to investigate the matter. Accordingly he commenced to excavate upon the premises. After digging down about seven feet, he struck a solid limestone rock. He found a well about eight inches in diameter, from which he procured salt water strong enough to enable him to obtain salt by boiling. The most remarkable feature of this discovery consists in the following: After the discovery of the well, Mr. Staples prosecuted his investigations, and found, to his surprise, a line of salt kettles.

The kettles were of stone ware, made of the same material as that used by the Indians for their home ware, such as plates, dishes, etc. The kettles were broken, but the curvature indicated that they were about three feet in diameter, and were about forty in number. A most striking fact connected with this discovery is that these kettles were found at a depth of seventy feet below the surface of the ground. Growing above them were trees—poplar and oak—which were evidently two centuries old. Will some of the antiquarians explain this? Who bored that salt well? Who made those kettles? Who founded that furnace? Who were our aborigines?" Who can tell?

A Pleasant Picture.

A young correspondent writes to the *American Agriculturist*: "On the morning of the 16th of May, (my birthday,) I shall hear the well-remembered call, 'Frank! Frank! come and drive the cows to pasture.' Going to pasture is quite an event of the season to me. No more naps in the morning! I have to go a mile and a half, and in summer get back in season to ride horse after breakfast, for cultivating, while father holds the cultivator, so the men can hoe while I am at school, a mile in another direction. On this particular first morning or two, it takes two of us to go, as the cows and young heifers are so delighted to get out at their liberty that they cut up all sorts of antics, and start off up any road they choose. Father goes in the wagon as a rear guard, and I have to dart up the road nearest to us, and drive them back, and by the time I get them into the main road they are racing madly along, and do not go quite until they run into the lake; they must take a drink there. Father rides in after them, and after a while we get them all out, and then up a long, gradual slope of the road to the pasture bars; then they all run off to eat the soft, fresh grass. At night two of us must go again, to separate the milk cows from the heifers, which are to stay there. I can now have leisure to look about me as I go home. There is always something to notice or to find. The Lake Kenosha is about two miles long and one mile wide. The name Kenosha is an Indian word for pickerel, and it is a good place for fishing. When the sun is rising over the wooded hills, and shines upon the thin, fleecy vapor rising from its surface, it is very beautiful. I might say it is always beautiful. On the east side it is bounded by a hill, covered partly with dark hemlock—a great place for mosses and Mitchellia, which blossoms the first week in July; then south-east there is 'sour meadows,' which is remarkable for its great variety of flowers in summer, and its black turtles. South of the lake there is a beautiful wooded hill, and west, a loamist grow and cultivated fields. North-west rises Mount 'Meenahyah,' which means blueberry—where the earliest blueberries grow; and on the north side the road winds along 'As old roads will, This to a ferry and that to a mill.' Crescent Point is a peninsula projecting into the lake on its north side, and is covered with maples, birches, willows, and filled up with underbrush. Here grows a great profusion of partridge berry, which blossoms the last of July, and so much 'white spoked' Clothea that we thought of naming it Clothea Point. I carry home large quantities of it in its season. By the

roadside I find the beautiful white Morning Glory tinged with pink, which we have named the Sunrise Morning Glory, and wild roses in abundance. In the autumn, by the lake side, we find a rich, dark, purple Aster, with larger flowers than usual, which we find nowhere else. Mother has had them from this place for 27 years, and never saw them elsewhere. These roses are not all I see. I get a chance at a rare birds-egg now and then—but you will not want my letter to be too long."

India "Rubber" Shoes received their name from the fact that the gum of which they are made was first brought from India, and because the first use found for it was to rub out pencil marks from paper. The proper name of the gum is *Caoutchouc*. In some places, rubber overshoes are called "gums," referring to the substance of which they are made. It is related that a gentleman and his wife going to spend the evening at a house where they were well acquainted, he entered the parlor alone. Some one asked "Where is Emily?"—meaning his wife. He at once answered, "Oh, she is outside, cleaning her gums on the mat." The reply caused a stare of astonishment, and then a hearty laugh naturally followed when the meaning was comprehended.

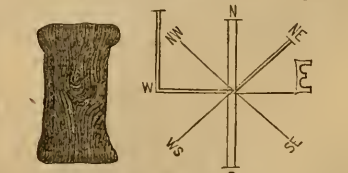
A Natural Mistake.—A lady promised to bring her little boy a cocoanut on her return from the city, but could only find one with the husk on. This she gave to the child, who had never seen one in this state. He looked at it curiously, smiled, and laid it down. Presently he said, "Mother, where is the cocoanut you promised me?" "I just gave it to you," she replied. Taking it up again he viewed it contemptuously for a moment, and then exclaimed, "That thing a cocoanut! I thought it was a new waterfall you had bought."

Sparse Woods.—A miner who lately came from Virginia City says that vegetation is so scarce in that region that "two mile stalks and a bunch of thistles are called a grove."

Answers to Problems' and Puzzles.

The following are the answers to the puzzles in the May number, page 191: No. 304. *Illustrated Rebus.*—A great auk or is General *ya* great bore, or A great talker is generally a great bore. No. 305. *Puzzle Picture.*—A race of pale faces. No. 306. *Fig leaf (left).*—The following have sent in correct answers to puzzles previously published: Arthur H. Sawyer, L. M. Wright, John M. Miller, Daisy Wilder, J. Milton Snyder, (as usual), Arthur Moffatt, Albert Cope, Mrs. Morgan, Emma L. Leavitt, "Rebel," Jas. & E. Lowe, Gen. C. Gill, Etta M. Dausser, J. N. Averill, Carrie Leslie, T. S. Cadwallader, Frank A. White, David M. Neill, Marie D. Butler, Abigail C. St. Clair, A. G. Hamblin, Lydia E. Moore, A. H. Haddock, Henry Dunn, Annie Brown, Susie Jones, M. Vandervoort, Ruth Carter, Frank Monroe, John Nicoll, C. O. Bassett, Oscar Kissam, Ellie L. Rankin, J. McCluskey, Andy Brink, Jas. A. Johnson, Ettie Woolman, J. H. Brust, Philo Hall, W. Shelly, Hammond W. Ormsbee, Mary E. Oster, Alfred Delisle, Augustus Reiltsch, James E. Demarest, George Smith, A. Leach, S. Ambrose, Farnes Levi Capp, Carrie Langdon, J. West Homer, A. Underwood.

New Puzzles to be Answered.

No. 307. *Illustrated Rebus.*—Something often forgotten.

No. 308. *Illustrated Rebus.*—Line from a favorite hymn. No. 309. *Arithmetical Problem.*—One man had two loaves of bread, his companion had five loaves. Another joined them and gave them one dollar to share their meal. The bread was all eaten by the three men. How much of the money should each of the bread owners receive?



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A S P L E N D I D T E A M. — Drawn and Engraved for the American Agriculturist.

There is more real "fun," as the boys call it, with such a team as is shown in the engraving above, than with the finest carriage and horses in New York. The boy's face is mostly concealed by his hat brim, but his whole attitude shows what he is thinking of; his soul is with his team. He may well be proud of them. They need no whip, and he carries none. They gallop along as though they enjoyed the sport. The dog on the "off" side seems to be rather new at the business—a little coltish. He looks around to his companion as though inviting him to join in a runaway frolic. No danger of that; old Whitey is out on business now, and will find his pleasure in that alone. By the way, that's a secret of enjoyment unknown to many. Most people, old and young, are looking away from their work and their present circumstances for happiness. They are like men wading through a river in chase of a log to quench their thirst with. Make the most of the *present*, as this boy and his team are doing, and thus secure the good it contains.

Another Charitable Dog.

W. Winkler, of Baltimore, Md., having noticed the dog story in the April No. of the *Agriculturist*, writes: "I was owner of a dog that went through the same maneuvers as the one described. This dog answered to the classical name of 'Mouth.' She was scarcely eight inches long, and was brought from Mexico. While in Baltimore she showed considerable affection for a rat terrier that seemed to live in reduced circumstances. As my window overlooked the yard, I observed myself how she would coax the large dog to her store-room, and wag her tail with satisfaction at the hungry guest's relish of the bones. It would hardly have been prudent for any other

dog even to smell of the food which the little animal considered her own. She was also a good mother, and divided all dainties with her young—showed great cleanliness, and would always coax her young to the door, to prevent them from greasing the carpet while feeding. But the greatest peculiarity is shown by an uncle of Mouth's, who was brought up in a Hebrew boarding-house, and who would not under any condition touch the excluded food. He would eat bread at all times, but no sausage, ham, or pork. I have often experimented with him, but always found him true to his principles."

The Promise Kept.

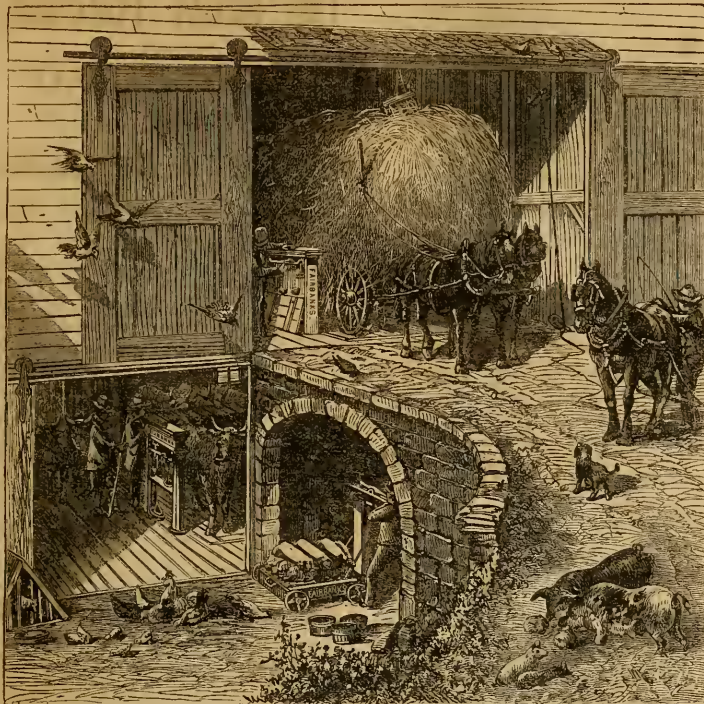
The following, from an exchange, is worth reading. A mother, on the green hills of Vermont, was holding by the right hand a son, sixteen years old, mad with the love of the sea. And as she stood by the garden gate one morning, she said: "Edward, they tell me, for I never saw the ocean, that the great temptation of a seaman's life is drink. Promise me, before you quit your mother's hand, that you will never drink." "And," said he, (for he told me the story.) "I gave her the promise, and I went the broad globe over, Calcutta and the Mediterranean, San Francisco, the Cape of Good Hope, the North Pole and the South. I saw them all in forty years, and I never saw a glass filled with sparkling liquor that my mother's form by the gate did not rise before me; and to-day I am innocent of the taste of liquor." Was not that sweet evidence of the power of a single word? Yet that was not half. "For," said he, "yesterday there came into my counting-room a man of forty years, and asked me, 'Do you know me?' 'No.' 'Well,' said he, 'I was once brought drunk into your presence on ship-

board; you were a passenger; the captain kicked me aside; you took me to your berth and kept me there till I had slept off the intoxication; you then asked me if I had a mother. I said I had never known a word from her lips. You told me of yours at the garden gate, and to-day I am master of one of the finest packets in New York; and I came to ask you to come and see me."

A Critic Confounded.

It is related of Powers, the sculptor, that while residing in Cincinnati, he made a figure of one Alexander Drake, a popular comedian. Some of Powers' friends were so much pleased with it that they invited the editors to examine it. Among those who came was one noted for severely criticising every performance, whether competent to give good judgment or not. The show room was dimly lighted, and the figure stood in a glass case. After gazing at it very intently several minutes, the critic said to Powers, who stood near him, "There are some good points about this, Hiram, but it has some extraordinary defects. The nose is too long entirely; and the mouth has a queer twist. One arm is longer than the other. The position, too, is unnatural. No man could stand that way if he tried. It would be impossible. I don't see, Hiram, how you could have made such a blunder." Powers laughed, and inquired of the figure:—"What do you think about it, Drake?" The figure immediately stepped out of the case, and, bursting into a loud laugh, said: "I think the position pretty natural, myself." The critic did not hear the last of the jest, and, it is said, he would never afterwards speak to the factious sculptor.

The new moon reminds one of a giddy girl, because she's too young to show much reflection.



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WEIGHING ON THE FARM.

The above engraving is designed to call attention to a subject now receiving much attention, and worthy the especial consideration of every farmer. The profits of farming depend very largely upon attention to things small in themselves, but in the aggregate amounting to a large share of one's income. One pound difference in the weight per bushel of grain, is not of itself a great matter, but the difference of the crop resulting from sowing the heavier or lighter sample may amount to hundreds of dollars when the crop is harvested and sold.

This is but a single illustration of the immense gain that might be realized by the use of a good Platform Scale as part of the regular farm appurtenances. The following extracts show the importance attached to the subject by good authorities.

The *American Agriculturist*, (May number), says: "Scales should be used in every house and barn. The proverb says, 'Deliver all things by measure and weight,' and ought to be heeded. Have Fairbanks' Standard Scales in the kitchen, and prove which groceryman gives weight, and buy of him. Weigh butter and everything sold, and do not mistrust that you are cheated. Weigh the chickens and see which kind are thriving and profitable. Have a Fairbanks in the barn, and weigh the pigs and stock and grain and hay and fertilizers, and thus know what is paying and what is not. A little practice in this line will pay a hundred fold in money and satisfaction."

The following from the *Country Gentleman*, of April 2, 1865, is equally to the point. "A half-bushel measure is considered indispensable by every farmer. He does not sell his potatoes or grain, guessing at the contents of the bin or the pile on the floor—it must be measured. With this instrument at hand, he may know just how much corn is fed to the hogs and poultry; how many oats to the horses; how much seed is sown upon the land, and many other points equally valuable to know. But a good weighing scale is possessed by comparatively few, although its use would in many ways be even more valuable than that of the half-bushel. For instance, in selling live stock the weight is usually estimated by the drover or butcher buying at the farmer's door. Long practice enables the buyer to weigh them very correctly with the eye, and thus he has the inexperienced seller at an advantage, while he is not slow to use a good Fairbanks' standard platform scale would save its cost in a few such transactions.

The weight of wool, butter, and other farm products, should be ascertained at home, to prevent mistakes and dishonesty in weighing after the goods have been sent to mar-

ket. The weight of grain per bushel, the gain of cattle under different systems of feeding, exactly when an animal ceases to increase by feeding, and many other important facts, can readily be determined by having a good scale. It should be part of the furniture of every farm. Fairbanks' scales have been named in this connection, as being entirely reliable, having been adopted as the standard in this and other countries."

The following extracts from remarks made at the New York Farmers' Club, were heartily endorsed by Horace Greeley and other prominent members present. "Farmer No. 1 feeds his cattle until he thinks they are fat enough to turn off, sells them to the butcher at their estimated dressed weight, and pockets the proceeds. How much of the amount is profit he cannot tell; he did not measure the feed nor weigh the animal.

Farmer No. 2 feeds out grain by measure or weight, and charges it to the bullock; at intervals of a week or so, he rigs his platform scale so that the animal can stand upon it, notes how much beef it shows for the grain eaten, and when the feeding does not pay, sells to the butcher or drover. In doing this he is not afraid of the buyer's practised eye, which can almost fix the notch at which a bullock will turn the scale. He has consulted his unerring Fairbanks, and knows when the right price is offered according to the rates quoted in his last week's paper."

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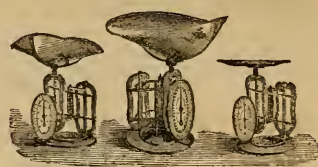
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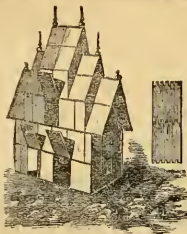
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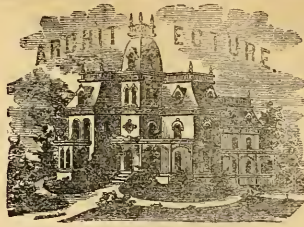
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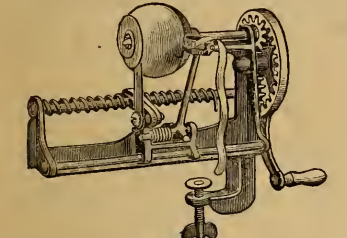
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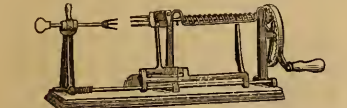
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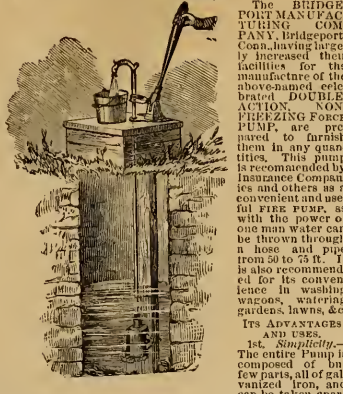
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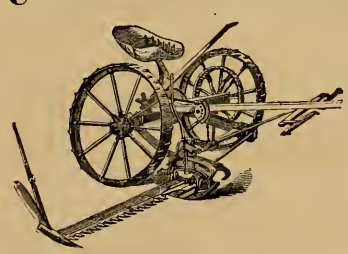
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putting them in. Pipe extra. In ordering pipe and pump
from the manufactory or of agents, be particular to give the
exact depth of well to top of platform; pipe can then be
furnished the length required, so that any man observing
the directions sent can set a pump without trouble. Orders
for pumps promptly filled. Sent by express C. O. D.

No.	Iron, <i>welded.</i>	Galv.	Size of Stroke.	Length of per minute.	Capacity, per minute.
1	\$12	\$15	3 1/2 inches.	4 and 6 inches.	15 to 20 gals.
2	20	25	4 inches.	4 and 6 inches.	25 to 35 gals.
3	30	35	5 inches.	6 inches.	40 gals.
4	50	60	6 inches.	7 inches.	120 gals.
5	20	25	6 inches.	12 inches.	300 gals.

Pipe, Hose, and Couplings required will be furnished at
the lowest price.

CLIPPER MOWER & REAPER.



This CELEBRATED and UNEQUALLED machine is manufac-
tured by The Clipper Mower & Reaper Company,
at their works at YONKERS, N. Y., where they have unsur-
passed facilities for the business. The Machine needs no en-
cumbrum. Farmers throughout all sections of the country
who have used it, are ready and willing to testify to its great
superiority for all work, combining, as it does, most
points of excellence than any machine yet made.

Its principal characteristics are:—SIMPLICITY of CON-
STRUCTION, DURABILITY, EASE OF DRAG, PORTABILITY,
and COMPLETENESS of FINISH IN ALL ITS PARTS.

These Machines are made of Four Sizes, to meet the
wants of any farmer, as follows:

No. 1, One-Horse machine (30 in. wheel), 3 1/2 feet swath.

No. 2, Two-Horse (light) 30 in. wheel, 4 feet swath.

No. 3, " (medium) 32 in. wheel, 4 1/2 feet swath.

No. 4, " (large) 35 in. wheel, 4 1/2 and 5 feet swath.

Made also as a Combined Mower and Reaper.

Address THE CLIPPER MOWER & REAPER CO.,
Nos. 12 & 14 Cliff-st., New York City.

Walter A. Wood's Prize Mowers and

Reapers. See advertisement in May number.

Dr. Grant's Deep Tilling and Trenching
Plows, all sizes.

Share's Patent Center Harrow, Cultivators,
Horse Hoes, &c., &c.

Swift's Improved Lawn Mower, the only reli-
able one in use. Six sizes, suitable for hand or horse-power.

Cliff's Aerating Churn will make good butter in
five minutes. Send for Circulars to

J. R. DECATUR & CO., Agents,

197 Water-st., New York.

Shaler's Family Scales. You want them. See
advertisement on page 231.

BUY THE BEST.

Honor to whom Honor is Due.



**TWO GOLD MEDALS
AWARDED ONE MACHINE.**

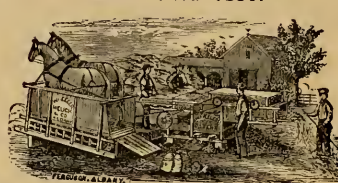
Harder's PREMIUM Railway
HORSE POWER AND COMBINED THRESHING AND
CLEANER, AT THE GREAT NATIONAL
TRIAL AT AUBURN, JULY, 1866.

For "Size and easy movement of horses—12 rods less than
15 miles an hour. Mechanical construction of the very best
kind, deserving of high commendation. Threshing and com-
bining workmanship and material in every place; nothing
slightest, excellent work, &c." as shown by Official Re-
port of Judges. Threshers, Separators, Fanning Mills, Wood
Saws, Seed Sowers and Planters, &c., all of the best in Mar-
ket. Circulars with price, full information and Judges' Re-
port of Auburn trial sent free. Address—

R. & M. HARDEE, Cobleskill, Schoharie Co., N. Y.

New York State Agricultural Works.

Established 1830.



Manufacturers of Wheeler's Patent Railway Horse Pow-
ers and Threshers and Cleaners, Lever Powers of the most
approved kinds, Clover Hullers, Foot Powers, Wood Saw-
ing Machines, Shingle and Heading Machines, Horse Plow-
s. The Atlantic Cotton Gin and Condenser, (Saw made
without flint, &c., &c.) Also dealers in the most approved
Agricultural Implements. Our machines cannot be ex-
ceeded if equalled by any in the market, and we guarantee them
fully as represented. Address—

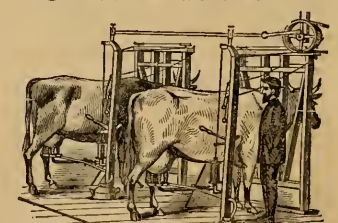
WHEELER, MELICK & CO., Albany, N. Y.
Illustrated Circulars and Price Lists sent on application.

The Sword Brick Machine

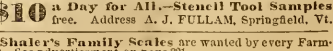
Grinds the clay, makes, presses compactly and frees from
the moulds by Steam Power 20,000 to 30,000 Superior Brick
daily. Four men receive them and bake them up as they
come from the machine. JACOB H. BRESMAN, Agt.,
No. 43 Broad-st., New York.

PATENT CHERRY STONER.—Takes out the
stones from one bushel per hour, without mashing the
fruit. Simple and durable. Price \$15. Agents wanted.
Address
GEHR & HUTCHINSON, Peoria, Ill.

HYDRAULIC COW-MILKER.



WANTED IMMEDIATELY.—All who are looking for busi-
ness to call and examine the HYDRAULIC COW-MILKER.
Pat. May 25, 1865, and Feb. 18, 1868. There never was a
patent issued from the Patent Office which has sold so readi-
ly as this. One hundred and sixty counties in which the
Company are now prepared to furnish the machines, have
been sold within thirty-five days, and many more engaged
by the most cautious and prudent business men. It is a sure
cure for aching hands and kicking cows. It milks the four
teats of a cow at once. It imitates the calf—draws and
teats of a cow at once. It milks cows perfectly dry in
from two to three minutes. It is operated by hand, dog,
or any other power. One man can attend several ma-
chines, milking as many cows at once. It is simple, dura-
ble, and self-adjusting. Will fit any cow. Milks three-eighths
over as well as any. Easily worked, and fully get out
of order, and has proven by practical use to be more agree-
able to the cow than hand-milking. Call one and all and
pass your judgment upon the most important and valuable
invention of the 19th Century. A rare opportunity is now
offered to enterprising men, with large or small capital, to
make money, either by traveling or locating in city or coun-
try. **HYDRAULIC COW-MILKING MACHINE CO.,** No.
1 Vesey-st., (Astor House Block), New York.



THE WEEKLY SUN

Is prepared with great care especially for country subscribers. The news of the week, in every department, is condensed for it by experienced and skillful editors, so that its readers will be able to learn in a brief space of time, every event of importance that has happened in any part of the globe. A selection from the most interesting editorial articles of THE DAILY SUN will form one of its constant features, while the most instructive and entertaining miscellany will also occupy a large portion of its columns.

The features and fluctuations of the markets of cattle, produce, and general merchandise, will be accurately and carefully exhibited in our columns; and while THE WEEKLY SUN is thus especially adapted to fill a place occupied by no other of our journals as a

General Family Newspaper, it will also furnish accurate and fresh reports of all matters of importance to

THE AGRICULTURIST AND GARDENER.

This department is under the supervision of ANDREW S. FULLER, who will not only write on the subjects in question, but will also attend the meetings of the Farmers' Club, and will daguerreotype their proceedings for the benefit of our subscribers. We shall also be glad to receive and print in this department OF THE SUN the results of the practical experience of our readers in agriculture and horticulture. Communications on these topics may be addressed to the Agricultural Editor of THE SUN, New York City.

A Liberal Offer.

We have received the following note from Mr. FULLER, which speaks for itself:

To the Publisher of The Sun.

SIR: One of the great pleasures of an editor is in knowing that his labors are appreciated by his readers.

I have taken a special charge of the Agricultural and Horticultural Department of THE SUN, I am desirous of ascertaining how many of its readers take a special interest in these subjects.

For the purpose of obtaining the desired information, I make the following proposition:

To every subscriber to THE WEEKLY OR SEMI-WEEKLY SUN, who shall send his name, with the full subscription price, before the 1st of May next, I will forward by mail, carefully packed, and postage paid, six root cuttings each of the Wilson's Early and Mattingly blackberries, or two good vines of the Concord grape. The one-year old plants of these new and most excellent blackberries are now being sold by our nurserymen at prices ranging from \$1 to \$3 per dozen; and the cuttings which I offer will make equally as good plants the first season, besides affording stock for their further propagation.

I do not offer these cuttings or vines as a premium, but having a quantity on hand, which I know to be genuine, I tender them to the agricultural readers of the WEEKLY and SEMI-WEEKLY SUN, as an earnest of my good will, and the pleasant relations which I hope to establish with them.

A. S. FULLER.

The price of THE WEEKLY SUN is fixed at

ONE DOLLAR A YEAR,

and while it is offered at this low rate, our friends will bear in mind that it is only by a very large subscription list that we can be enabled to derive from it anything like a fair compensation for the trouble and expense involved in its publication. It is true that it is printed upon a sheet of more convenient form and dimensions than most of the other general weekly newspapers of this city; but the very condensation and popularity give it value, and make its contents so quickly and easily accessible to every reader, are gained by unusual care and labor on the part of its editors. It is comparatively easy to fill a big blank paper up with long and uninteresting articles, the work of condensation requires labor, talent, and continual watchfulness.

Twenty copies of THE WEEKLY SUN will be mailed to one address for \$17, and fifty copies for \$37.50, invariably in advance. Address THE SUN, New York City.

THE SEMI-WEEKLY SUN

Will be of the same size and general character as THE WEEKLY, but will have space for a greater variety of miscellaneous reading, and will furnish the news to its subscribers with greater freshness, because it will come twice a week instead of once only. Its subscription price will be only

TWO DOLLARS A YEAR,

which is the ordinary price of a New York weekly. We confidently recommend this edition of THE SUN to all our friends in the country who wish to receive their paper more frequently than once a week, and keep themselves more freshly posted with regard to the news.

Subscriptions to THE SEMI-WEEKLY SUN will now be received; but the first number will not be issued until THE FIRST WEEK IN APRIL, as it is entirely a new paper; the editions of THE SUN having hitherto been Daily and Weekly only.

Cuts of ten Subscribers, who have their papers sent to one address, will receive THE SEMI-WEEKLY SUN on payment of \$18. Twenty copies will be sent to one address for \$35; and fifty copies for \$40, always in advance.

Address THE SUN,
New York City.

THE WEEKLY SUN and AMERICAN AGRICULTURIST will be furnished together for \$2.00.

THE SEMI-WEEKLY and AGRICULTURIST for \$3.00.

THE CHICAGO WEEKLY REPUBLICAN,

The best Weekly Newspaper published in the West, will be issued as a Campaign Paper from the meeting of the National Republican Convention, May 21st, to December 1st, for the

Very Low Price of 50 cents.

It will contain the fullest political intelligence, general news, commercial reports, choice selections of reading matter, and able editorials on all important current topics. It must command itself particularly to Republican Clubs and Campaign Committees as the cheapest, most entertaining, and most effective campaign document issued. Every Republican should take it and see that his neighbor has it.

SEND IN YOUR ORDERS.

Address REPUBLICAN CO., Chicago, Ill.

To Advertisers.

THE MIRROR AND FARMER, a weekly paper published at Manchester, N. H., is the leading Farming and Family Paper in the Eastern States. It is a quarto, about the size of the New York Weekly Tribune. Specimen copies sent free upon receipt of a two cent stamp to prepay postage. Terms of advertising—Ten cents for a line of space each insertion. Twelve lines make an inch long. Twenty dollars per column single insertion.

JOHN B. CLARKE, Editor and Proprietor.

Journal of Agriculture.

A Weekly, Illustrated, Practical, Western paper. Subscription price, \$2.00 a year. Volume 4 begins July 1st. It will be sent from June 1st to the close of the year, giving Vol. 4 complete, with index, for one dollar. Try it. Specimens sent free. Address

L. D. NORSE & CO., Publishers,
St. Louis, Mo.

TRICKS

OF THE TEA TRADE AND TEA COMPANIES, extemporaneous preaching, art ventriloquism, peanut culture, home made tea, medicinal spots, making swindlers, swindlers' club, mystery of the human head floating in the air, cancer, judging horses, a canine art, choosing canaries, best white-washes, teaching the dumb to speak, what to do for a copyright as a universal accomplishment, getting gratis advertising, how to tame and how to train birds, queer facts—see—how, walking tall, fish, training, art bath and for athletic contests, Japanese magic, how people see ghosts, how to write letters, maps, and how to get artificial honey, rich men of the world and how they gained their wealth, exposure of the "soul-charming" humbug and the art of "revivifying" the dead, "how to get rich" and puzzles for the young, &c., &c., in HANLEY'S JOURNAL, an interesting and valuable illustrated monthly, which you can get the whole of 1868 for only 25 cents by sending now to JESSE HANLEY & CO., 119 Nassau-st., N. Y. Single copies of newspapers only. 12 exposures of humbugs and swindlers by the author of "Regrets and Regencies" in every number.

TROTTER'S HORSES, AND HOW TO TRAIN THEM. PEDIGREES, AND WHERE TO FIND THEM. Horse Portraits.—Breeding, Rearing, and Training Trotters. Preparations for Races; Management in the Stable; on the Track; Horse Life, &c. By JOSEPH GAYN STARCH. One crown 8vo, volume.....\$3.00

WALLACE'S AMERICAN STUD-BOOK.

Being a compilation of the Pedigrees of American and Imported Blood Horses, from the earliest records, with an Appendix of all named animals without extended pedigrees prior to the year 1840. And a Supplement containing a History of all Horses and Mares that have trotted in public from 1840 to the present time, till the close of 1867. By J. H. WALLACE. 1,000 pages, illustrated with original Portraits, and engraved on steel, of about 20 celebrated Racers and Trotters.

One vol. 8vo, cloth, gilt.....\$10.00

A NEW WORK ON THE RIFLE. Entitled THE CRACK SHOT.

By E. C. BARBER. Price \$2.00. Sent pre-paid on receipt of prices, by W. A. TOWNSEND & ADAMS, 434 Broadway-st., New York.

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WELLS' EVERY MAN HIS OWN LAWYER AND BUSINESS FORM BOOK.

It is a complete and reliable guide in all matters of law and business transactions for every State in the Union. It will save many times its cost in a twelvemonth.

The professional man, the farmer, the mechanic, the merchant, the manufacturer, each requires a convenient, comprehensive, and reliable work, which will enable him to draw up any instrument that may be required, and that will furnish him with such information as is essential to be put in all his business relations of life—a book that everybody can understand, and that will enable every man or woman to be his or her own counsel.

The entire leading press of the country unqualifiedly indorse the work.

The work is published 12mo, size, 650 pages. Price, full leather binding, \$2.50; half library, \$2. Sent post-paid on receipt of orders sent everywhere. Address

B. W. HITCHCOCK, Publisher, No. 98 Spring-st., N. Y.

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ARE YOU OUT OF EMPLOYMENT?

Sent at once and secure an Agency for

HEADLEY'S LIFE AND CAMPAIGNS OF GENERAL GRANT.

With introduction by HORACE GREELEY.

It is the most complete, most popular, and best illustrated, and the most liberal terms given to agents, and is necessary for every family.

Every family will want a copy of the Life and Public Services of the next President. If you want to make money easily and honestly, we advise you to address, for further particulars,

DERBY & MILLER, Publishers, No. 50 Duane-st., N. Y.

PROF. VILLE'S NEW SYSTEM OF AGRICULTURE.

Pamphlet, price 25 cents. Address JOHN H. RIDDLE, Manchester, N. H. N. Y. Independent says of this work—"AGRICULTURAL COMBUSTION, EXTRACTED TO COMMON SENSE." Every farmer should have the work.

THE INDEPENDENT FOR \$1.

The N. Y. Independent

AND

THE LIBERAL CHRISTIAN

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FOUR DOLLARS!

We have decided, for the next three months, to offer to every new subscriber to THE LIBERAL CHRISTIAN sending us \$1 extra (or \$1) a copy of the N. Y. INDEPENDENT for one year. These are two of the largest religious papers in the world, and cannot be had for less than \$3.50 a year when taken singly.

THE LIBERAL CHRISTIAN is acknowledged on all sides to be the freshest, spiciest, and ablest religious sheet published, price \$3 per year. The Independent is \$2.50 per year.

REV. H. W. BELLOW'S greatly admired
EUROPEAN LETTERS,
reprinted from the columns of

The Liberal Christian,
are now in press by MESSRS. HARPER & BROS., and will be issued in two large and handsome volumes. Price \$1.75 each. The first volume is ready and will be delivered in a few days. Sent by mail to any address, post-paid, from this office, on receipt of price.

A MAGNIFICENT GIFT!
In view of the great interest felt in these Letters, and the desire to get an early copy, we have made arrangements with Harpers, by which, for the next three months,

THE FIRST VOLUME
OF
DR. BELLOW'S LETTERS
WILL BE PRESENTED TO
EVERY NEW SUBSCRIBER

to THE LIBERAL CHRISTIAN sending us 50 cents in addition to his \$3, and 25 cents to pay the postage of the work; or

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One new subscriber for two years in advance will be considered the same as two new subscribers.

THE LIBERAL CHRISTIAN,
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(each for one year) and The First Volume of
DR. BELLOW'S LETTERS,
Will be furnished for
FIVE DOLLARS!

And twenty-five cents additional to cover postage. These propositions are intended only for NEW subscribers, whose names have not been upon our books (or the books of THE Independent) within the year, and they will remain open only for the space of three months.

The Liberal Christian

is not only one of

THE LARGEST AND MOST ATTRACTIVE

In appearance, but is, upon all sides, acknowledged to be

THE MOST ABLY EDITED

as it is, also, the MOST EXPENSIVE

RELIGIOUS JOURNAL IN THE WORLD!

It is not intended as a money-making institution; and however large its circulation or its receipts, EVERY PENNY WILL BE EXPENDED IN PUSHING FORWARD THE WORK. Let all understand and know that

We are in Earnest,
and intend, by every practical and proper means in our power
To Push Forward the Work

AND

To Increase Our Usefulness.

We ask friends of religion and humanity, one and all, In Every Village, Hamlet and Town,

to take hold of the work and help us forward in the good cause.

Address J. N. HALLCOCK, Manager,
83 & 84 Nassau-street, New York.

OFFICE OF THE LIBERAL CHRISTIAN.

P. O. Box 6695.

(Advertisements on this page, \$2.50 per Agate Line of Space.)

ESTABLISHED 1861.

THE

GREAT AMERICAN
TEA COMPANY

HAVE RECEIVED

TWO FULL CARCOES
OF THE FINEST NEW CROP TEAS.22,000 HALF CHESTS by ship *Golden State*,
12,000 HALF CHESTS by ship *George Shotton*.

In addition to these large cargoes of Black and Japan Teas, the Company are constantly receiving large invoices of the finest quality of Green Teas from the Moyne district of China, which are unrivaled for fineness and delicacy of flavor.

To give our readers an idea of the profits which have been made in the Tea trade, we will start with the American houses, leaving out of the account entirely the profits of the Chinese factors.

1st. The American house in China or Japan makes large profits on their sales or shipments—and some of the richest retired merchants in the country have made their immense fortunes through their houses in China.

2d. The Bunker makes large profits upon the foreign exchange used in the purchase of Teas.

3d. The Importer makes a profit of 30 to 50 per cent. in many cases.

4th. On its arrival here it is sold by the cargo, and the Purchaser sells it to the Speculator in invoices of 1000 to 2000 packages, at an average profit of about 10 per cent.

5th. The Speculator sells it to the Wholesale Tea Dealer in lots at a profit of 10 to 15 per cent.

6th. The Wholesale Tea Dealer sells it to the Wholesale Grocer in lots to suit his trade, at a profit of about 10 per cent.

7th. The Wholesale Grocer sells it to the Retail Dealer at a profit of 15 to 25 per cent.

8th. The Retailer sells it to the Consumer for ALL THE PROFIT HE CAN GET.

When you have added to these EIGHT profits as many brokerages, cartages, storages, cooperages and wastes, and add the original cost of the Tea, it will be perceived what the consumer has to pay. And now we propose to show why we can sell so very much lower than other dealers.

We propose to do away with all these various profits and brokerages, cartages, storages, cooperages and wastes, with the exception of a small commission paid for purchase to our correspondents in China and Japan, one cartage, and a small profit to ourselves—which, on our large sales, will amply pay us.

By our system of supplying Clubs throughout the country, consumers in all parts of the United States can receive their Teas at the same price (with the small additional expense of transportation), as though they bought them at our warehouses in this city.

For manner of getting up Clubs, see former advertisement in this paper.

Parties sending Club or other orders for less than thirty dollars had better send Post-office Drafts or money with their orders, to save the expense of collections by express; but larger orders we will forward by express, to collect on delivery.

Henceforth we will send a complimentary package to the party getting up the Club. Our profits are small, but we will be as liberal as we can afford. We send no complimentary package for Clubs less than \$30.

Parties getting their Teas of us may confidently rely upon getting them pure and fresh, as they come direct from the Custom House stores to our Warehouses.

We warrant all the goods we sell to give entire satisfaction. If they are not satisfactory, they can be returned at our expense within 30 days, and have the money refunded.

The Company have selected the following kinds from their stock, which they recommend to meet the wants of Clubs. They are sold at cargo prices, the same as the Company sell them in New York, as the list of prices will show.

PRICE LIST OF TEAS:

OO LONG (Black), 70c, 80c, 90c., best \$1 10 c.
MIXED, (Green and Black), 70c, 80c., 90c., best \$1 per lb.
ENGLISH BREAKFAST (Black), 80c., 90c., \$1, \$1.10, best \$1.20 per pound.
IMPERIAL (Green), 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
YOUNG HYSON (Green), 80c., 90c., \$1, \$1.10, best \$1.25 per pound.
UNCOLORED JAPAN, 90c., \$1, \$1.10, best \$1.25 per pound.
GUNPOWDER, (Green), \$1.25, best \$1.50 per pound.

Consumers can save from 50c. to \$1 per pound by purchasing their Teas of this Company.

COFFEES ROASTED AND GROUND DAILY.

GROUND COFFEE, 25c, 35c, 40c, best 40c. per pound.
Hotels, Saloons, Boarding-houses, Keepers, and Families, who use large quantities of Coffee, can economize in that article by using our FRENCH BREAKFAST AND DINNER COFFEE, which we sell at the low price of 30c. per pound, and warrant to give perfect satisfaction.

ROASTED (Unground) 30c., 35c., best 40c. per lb.
GREEN (Unroasted) 25c., 30c., 35c., best 35c. per lb.

N. B.—All villages and towns where a large number reside, by Clubbing together, can reduce the cost of their Teas and Coffees about one-third (beside the Express charges), by sending directly to "The Great American Tea Company."

BEWARE of all concerns that advertise themselves as branches of our Establishment, or copy our name either wholly or in part, as they are *bogus* or *imitations*. We have no branches, and do not, in any case, authorize the use of our name.

Post-Office Orders and Drafts, made payable to the order of "Great American Tea Company," Direct letters and orders to the (as below, no more, no less)

Great American Tea Company,

Nos. 31 and 33 VESEY-ST.,

Post-Office Box, 5,613, New York City.

A BOOK FOR EVERY FARMER.

THE ELEMENTS OF
AGRICULTURE

By GEO. E. WARING, JUNR.,

AUTHOR OF

DRAINING FOR PROFIT AND DRAIN-
ING FOR HEALTH.

Formerly Agricultural Engineer of the Central Park, New-York. Revised Edition.

This book was first published about 15 years ago, and was more largely sold than any book of the same character ever brought out in America.

It has now been carefully revised in the light of the latest discoveries of Agricultural Science, and is cordially recommended to every farmer, young or old, who would understand the simple principles on which his success most depend.

It is written in a style that will be readily understood by all, and while necessarily referring to, and explaining, the chemical relations between the soil and the plant, there is the greatest possible avoidance of the use of Scientific terms. In fact it may be regarded as a translation into the simplest English of much that, while it is of the greatest importance to the farmer, has hitherto been so clothed in technical language as to be practically inaccessible to him.

The chapters on Manures will be accepted by all as a clear statement of the principles which underlie the production and use of the most common fertilizers, and will be found most valuable to the practical farmer. If a copy of this book could be placed in the hands of every farmer in the land it would add largely to the average crops of the whole country.

PRICE ONE DOLLAR.

Published and for sale at the office of
THE NEW YORK TRIBUNE.

* Sent by mail, postage paid, on receipt of price.

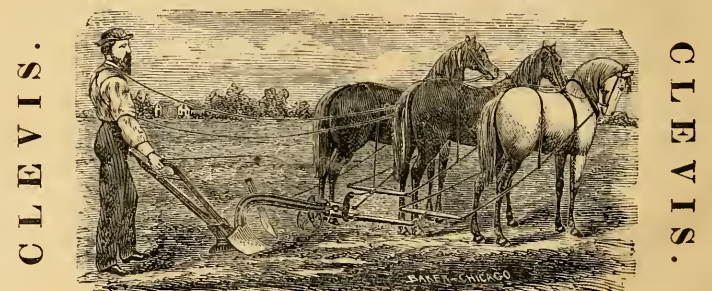
RURAL IMPROVEMENTS.

Robert Morris Copeland, author of *Country Life*, furnishes plans and advice for laying out Public and Private grounds of every description. Refers to John M. Forbes, Nathaniel Thayer, Boston, F. G. Shaw, New York, O. S. Hubbard, Philadelphia, G. T. Fletcher, Indianapolis, Ind.

Office 40 Barristers' Hall, Boston, Mass.

SEE EDWARD BURGESS'S advertisement of "Cabbage Plants" on page 238.

FARMERS LOOK AT THIS.



An invention for hitching three horses to a plow—so there is no side draft. Thousands are in use on the prairies. Sure and simple. Single Clevis—sent by Express—free of charge. Price \$3. Liberal discount to the trade.

N. B.—Any infringement of Patent promptly prosecuted. For particulars address
G. H. GALE, Sec'y, THREE HORSE CLEVIS MFG'G. CO., Kalamazoo, Mich.

RAND'S PNEUMATIC GAS.

WARRANTED.

The Simplest, Safest, and Best Gas-
Works in the World.

The gas made by these works is more uniform in quality than that made by any other known process.

The material used is supplied but once during the year, while all other apparatus used for making gas, such as are known as automatic machines especially, are to be supplied as often as weekly, semi-weekly, and daily.

The works being outside, and entirely separate from the dwelling-house or building to be supplied with the gas, servants and others have no occasion to approach them.

All machinery being entirely dispensed with, these works can never get out of order.

The gas can be made for less than one-half of the price of coal-gas.

Enough gas can be made in from five to thirty minutes to supply dwellings, hotels, and factories using from twenty-five to one thousand burners.

Accidents are impossible, as the tank holding the liquid is placed in the ground surrounded by water and covered with the iron gas-holder.

It is the only portable gas-works that insurance companies do not class as extra hazardous.

We guarantee our gas-works to give satisfaction.

No skill is required to make this gas; a boy ten years old can make sufficient gas for ordinary dwellings in five minutes.

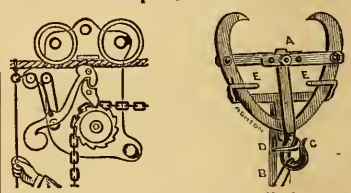
It is a clean, clearly, and convenient substitute for coal or wood to heat dwellings, and for all culinary operations, etc.

Those desiring further information will please send for descriptive circular to the Office of the Company, where working models may be seen.

A. C. RAND & CO.,

16 Nassau Street, New York.

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NEW YORK, JULY, 1868.

NEW SERIES—No. 258.



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KERRY CATTLE.—THE PROPERTY OF ANDREW H. GREEN, ESQ. ON EXHIBITION AT THE NEW YORK CENTRAL PARK.

The Kerry breed of cattle offer another example, like those of the Channel Islands, of a variety which has been formed by the urgent necessities of a people. County Kerry is a rude, rough, poor district in the southwestern extremity of Ireland. As an agricultural region it is primitive, isolated, and, in part, mountainous and sterile. Pushing out into the ocean, it not only forms a headland or breakwater against the warm Gulf Stream, but presents a bold front to all the storms of the Atlantic. This gives rise to that abundant moisture which

adapts the country to the growth of peat; and peat bogs alternate with rocky pastures, upon neither of which could ordinary cattle pick up a tolerable living—while at the same time, the climate is milder than that of any other portion of the British Islands. The poor people needed cows which would sustain themselves upon scanty fare, and give an abundance of good milk, and in the course of time this has been brought about. The Kerrys are very small, hardy, rugged cattle, not notable for symmetry, or any beauty but that of a picturesque rough-

ness; they yield an abundance of excellent milk, and make, properly fattened, very good beef.

Our engraving is a truthful representation of three animals of this breed, the property of Andrew H. Green, Esq., of this city, and now on exhibition at the Central Park. The stock was imported in 1864, the bull having just taken the prize of the Royal Agricultural Society of England. The herds of that mountainous district having been searched by an experienced breeder, with the object of securing the very

(Concluded on page 259.)

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AMERICAN AGRICULTURIST.

NEW-YORK, JULY, 1868.

Farmers naturally feel greater solicitude in regard to the results which this month will effect than about those of any other similar period. And well they may. It is not farmers alone who are interested; every man, woman, and child, in the length and breadth of the land has a personal interest in abundant crops, well gathered. Upon no other thing does the prosperity of the whole country so much depend. The great bulk of the grass crop, which is more valuable than any other, the most of the wheat crop, and of all winter grains, are harvested in July. The character of the season settles the amount which will be realized from spring sowed grains, and in fact most summer crops. Where droughts prevail this month they may almost, if not entirely, destroy the corn, potatoes, pastures, and aftermath. Protracted rains will cause great damage to grain and hay, not secured; standing grass will become tough and wiry, losing much of its nutritive value, and will fill up with a new growth, chiefly of clover, which is not really healthy when cured for hay. One of the most important things for us to do is to provide forage crops to take the place of short pasturage in the fall. The corn sown in May will help out the feed this month. Every one ought to have a set of hay and grain caps as a defence against showers and storms. We should arrange good plans for quick work. When the weather is favorable, keep the soil among hooch crops always mellow, not working it so deep, however, in dry weather as to cause the crops to wilt. The progress of the age is shown more in the application of machinery and horse power to save the labor of human hands than in any other way, and it is essential to profitable farming, that, so far as possible, we avail ourselves of the most valuable helps. Smooth land is essential, if we would make the best use of tilling and harvesting machinery. Clean land, that having a comparative freedom from weeds, is indispensable to the most advantageous use of horse power in tillage. Freedom from water standing within a few feet of the surface, accomplished by means of thorough drainage, is, perhaps, the most important means of making the tiller of the soil in a measure independent of both wet and dry seasons. For the ease and comfort of the farmer and his teams, and the durability of his implements a removal of the stones, so far as possible, is most important.

Hints about Work.

This is a month of hard work; haying presses upon hoeing, and this has to be neglected too often for the grain harvest. Then turnip and buckwheat sowing, cabbage setting, and a score of other necessary or desirable things fill every moment of the long days, and may cause sore perplexity if the plans are not well thought over for each day and for several days ahead.

Weather.—We expect hot weather, with some two or three weeks very hot and dry. We must be prepared to take advantage of a few rainy days early in the month to transplant cabbages, fill out tobacco, or vacant spots in the rows of ruta-bagas. Thunder storms must be looked out for, and hay and grain shielded from damage as well as possible.

Hay.—Cut, cure, and mow away by horse power if possible. Steady and rapid drying of the hay, as when the hay tender tosses it up every few minutes until it is cured, is best; curing in the cock after having been twice turned, and cocked up while hot, next best, and makes better hay than that sunned and dried, and raked up after the dew falls, in the usual way. Cotton stuffs are cheap enough to make hay caps now, and they often pay for themselves in one rainy week. Upon shocks of

Grain, caps of cloth are very useful, as it takes no longer to put them on than to put on the cap sleeves. Cut when nearly ripe, and if the straw is short or dry, it saves time and labor to take to the field dampened, long rye straw for bands.

Pastures must be well looked to, and if they begin to get short, the cattle should be fed daily with green corn fodder, or other green feed. Top-dress with guano, ashes, plaster, or any fine compost.

Root Crops.—Ruta-bagas sown last month should be well hoed and thinned. Hoe other roots. Sow turnips any time during the month. A full crop of Ruta-bagas cannot be expected, but a very good one may be excellent for the table. Sow Strap-leaf or Cowhorn turnips only after the 25th. They will do well sown among corn at the last hoeing.

Potatoes.—Keep weeds pulled; scatter turnip seed or set cabbage plants, when hills are wanting.

Corn.—Keep down the weeds with the plow and cultivator until the corn is too large; do as little hand-hoeing as possible, but pull the weeds close in by the hills, and work the rest of the ground by horse power. Sweet corn will mature "roasting ears," if sown as late as the 4th of July, and corn may be sown for green or dry fodder up to the 20th.

Stacks for hay, grain, and corn fodder, are best made long and narrow. For such, the horse-fork attached to a pair of large shears may be used.

Cabbages.—Set on rich land, where early potatoes, peas, etc., were taken off. Top-dress with lime, and water freely when first put out; when well established and beginning to grow, a few waterings at evening with liquid manure, (barley-tye) will give them a grand start, and do much towards securing a large crop. Hoe very frequently.

Buckwheat may be sown any time during the month. It is one of the most profitable crops we raise, occupying the ground but a very short time, doing fairly on land not in the best heart, and well on any land not enriched with rank manure and not too wet. It makes so dense a covering as to choke down all common weeds, and yields a very good return for the labor it requires, in grain and straw, which latter is a valuable addition to the manure heap. An old practice, rarely followed of late years, so far as we know, yet not to be overlooked, is the sowing of buckwheat as late as the last of this month or first week of August with wheat. This crop matures before frost, or not at all, and being removed the wheat has the ground at the rest of the season and is not perceptibly injured.

Orchards.—It is often a problem what crops to put in an orchard, which should be filled for the benefit of the trees. Potatoes seldom do well on a sod, and weeds will grow badly under the trees. Corn or grain should be out of the question, because they make their strong growth just when the trees do theirs, and are a serious damage. "No white crop in an orchard," is the old English rule. Potatoes, roots, cabbages, and clover, are beneficial. On rather light loams, the sward turned over flat, rolled, and harrowed so as not to tear the sod, buckwheat will make a fair crop. The soil will rot, the grass be kept under, and if the stubble be mowed and plowed after the crop is off, the land will be in good condition for potatoes or root crops the next year if not too much shaded.

Manure Making.—If the weather be dry, employ every spare hour in ditching and draining swamp holes and mucky places, to get out a good supply of material for composts. All peaty matter, bog grasses, ferns and rushes, sods, wherever found, and in the absence of these, good surface soil, or even sand, ought to be freely used to compost with stable and yard manure. This is more important during the warm weather than at any other time. It is best to lay up the materials in compact rectangular heaps, having drainage secured under the whole bottom. The hog pens should be well supplied with weeds and green vegetable matters of all kinds, which they rapidly convert into manure. It is the saying of an old farmer: "Anything that grows in the summer will rot in the winter." This may not be exactly true, but sufficiently well indicates the kind of material to put into hog pens.

Animals.—All kind of animals do better for being well fed. Young stock grow much more rapidly for a little meal; oil-cake porridge is grand feed for hogs, and they need but little to keep them well growing. Bees ought to get grain in addition to

the best grass; they do much better for it, and it costs less to fit them for market. Be sure that there is no lack of water, and it is best to keep salt where all the stock can always get at it.

Weeds.—Maintain constant warfare; cut those in blossom, whenever seen, and throw them into the hog pen. Any that go to seed should be burned.

Irrigation.—This subject is constantly exciting more interest. It is especially valuable for the production of grass, though its application is by no means limited to forage plants. The great value of the hay crop naturally leads us to wish to double it. Wherever an opportunity occurs, turn a gentle stream of water upon fresh-mown grass land, and so distribute it that it shall trickle over as wide a surface as possible. Let it stay on a day or two at a time, and report the result.

Drainage.—The importance of drainage is only imperfectly understood. It is the best agency we can employ as a protection against protracted droughts. Those especially interested should read *Draining for Profit*, or that epitome of the subject in the *American Agricultural Annual for 1897*.

Work in the Horticultural Departments.

On a cold, wet day in June, it is not easy to write notes for July. The poor little boy in one of Reader's stories says: "Father, there wasn't any breakfast for breakfast." Thus far we have not had any June for June, but trusting that it will come out all right—as it always does—we make our notes usual for July in the full faith that warm and sunny days are in store for us.

Orchard and Nursery.

Thinking is so much neglected, and yet so important, that we must, at the risk of repetition, often insist upon it. If one has any doubts upon the subject, let him take two trees of the same variety of peach or pear, and from one remove half or three-fourths of the crop, and upon the other let all the fruit grow. When the fruit is ripe, market the crop of each tree, keeping a correct account of all the expenses, and see which tree has paid the most. One bushel of good fruit will bring more than three bushels of poor.

Peaches should be handled with care; pick just before they soften, so that they will reach market in good order. Crates are better than baskets.

Cherries.—When these—as is often the case—are "picked on shares," watch the pickers, who often do much damage. Allow no person with heavy boots to go into the trees, and if a picker picks fruit-spurs as well as fruit, make him stop his work.

Budding will commence with the plum and cherry, according to the season. Some hints upon the subject are given on a subsequent page.

Pruning is to be continued, and on young trees superfluous growths are to be rubbed off.

Insects are always to be fought. Sufficient directions for fighting them were given last month.

Black Knot on plum and cherry is to be cut out on its first appearance.

Cultivate young orchards as directed last month. **Mulch** around young trees, if this treatment is preferred to cultivation.

Cherry Stones are to be collected, and mixed with a plenty of sand before they dry up.

Fruit Garden.

Picking and Marketing of fruits was sufficiently discussed last month on page 224. Fruit sent to market must be picked in a "firmer" condition than that intended for home use. That which is to be used in the family may get "dread ripe" before it is gathered, and then it is improved by being cooled in the ice-box before it is eaten.

Blackberries are to be kept in check; pinch back the side shoots to 13 inches, and keep the whole growth compact and within control. The pinching should be attended to at least every two weeks.

Raspberries.—In garden culture it is best to prune out the old canes as soon as the fruit is off. Treat all suckers not needed for new plants like weeds.

Currants.—If a late brood of the worm appears, give a dusting of white hellebore. By shading a number of bushes, the season of this excellent, but much neglected fruit may be much prolonged.

Strawberries may be transplanted now, and the plants become sufficiently well established to give a crop next season.

Dwarf Trees in the fruit garden will need all the care with regard to insects mentioned for those in the orchard. Thinning is particularly recommended, especially with those pears that bear fruit in clusters. If the red spider appears upon pear trees, drench them with strong soap-suds.

Grape Vines will now need constant care. See what has been said upon summer treatment in the articles on the vine in this and previous numbers.

Kitchen Garden.

Asparagus.—Give a dressing of manure and let it grow. Fertilizing will do you better than at any other time. If the beetle appears, cut and burn. It is a quite small black beetle and a black grub. There is no help short of extermination.

Beans.—Plant bush sorts for succession, and pinch the Limas when they are six or seven feet high.

Beets.—Thin, and use the thinnings for "greens." A crop may be sown even at this late day.

Cabbages, Cauliflowers, and the related plants which have been sown in an open ground seed-bed, are to be transplanted. Keep well cultivated.

Celery.—Set the plants for the main crop in rows three feet apart, and the plants six inches distant. Plants set in trenches are to be gradually earthed up.

Carrots.—Work between the rows until the size of the leaves prevents it.

Corn.—Put in a plenty for late use and to dry.

Egg Plant.—Manure, hoe, and coax in every possible manner. Do not let the fruit remain long in contact with the ground, or it will rot. A little straw or a shingle may be put under it.

Endive.—Sow and treat just like lettuce—only before it can be eaten it must be blanched either by tying up each plant separately, or placing a board over a whole row, to exclude the light.

Herbs.—Transplant from seed-bed to ground vacated by other plants, and keep well cultivated. Our market growers make two or three cuttings.

Melons.—Remove all the fruit that will not ripen.

Onions.—Keep free from weeds.

Peas.—Late sorts are sure to mildew. If a late sowing is tried, it is only as a venture.

Seeds.—If you have not the courage to save the best and earliest peas, cucumbers, tomatoes, etc., for seed, don't save seed at all. But if you would get better vegetables every year, save the earliest.

Sweet Potatoes.—At the North it is not advisable to allow the vines to root. Keep free from weeds.

Squashes.—Hand-picking is the only remedy we know of for the Squash-bug. Let the vines of the running sorts take root at the joints.

Tomatoes in some gardens are trained to trellises, but brush or anything that will keep the fruit from the ground is used in ordinary culture.

Weeds are always to be fought, and there is nothing better than a sharp steel rake with long teeth, and a good man at the end of the handle.

Flower Garden and Lawn.

Lawns need frequent cutting and rolling. Whenever perennial weeds appear, such as thistles, plantains, dandelions, etc., take them out while young. Keep the margins neatly cut, whether along a walk or road, or those of a bed cut in the lawn. What a carpet is to a parlor, a well-kept turf is to a place, large or small; it sets off everything else.

Neatness in all parts of the grounds is to be preserved by constant attention; see article on sticks, strings and wires, page 201. Daily care is needed.

As soon as plants have passed out of flower, cut away the flower stems, unless seeds are needed.

Climbers will need attention; those upon buildings should not be allowed to twine around water conductors. See that they are properly supported, so that a heavy wind will not bring them down.

Dahls.—The early blooming sorts, such as hyacinths and tulips, will now begin to ripen. As soon as the foliage begins to show by its wilting that the bulbs are maturing, take them up and lay them on their sides in a shady place until the foliage dries up; then store the bulbs until time to plant.

Lilies.—The Japan sorts are apt to be troubled by a worm, and need frequent inspection; keep well tied to stakes, to prevent breaking by winds.

Foliage Plants, like Coleus, should be made to grow bushy by cutting back. Where there are two or more colors, keep them from running together.

Annuals.—Quick growing ones may still be sown for a late bloom. Transplant the earlier sown ones.

Dahlias should now be making a good growth; keep well tied up, and water in dry weather.

Roses.—Give the new growth of climbing roses care in training. Use cresylic soap or some other insect-killing compound as soon as insects appear.

Perennials.—Sow in a reserve bed as soon as they ripen, and they will make plants for next year.

Green and Hot-Houses.

The plants left in the houses, even the tropical ones, must be shaded from our hot summer suns. The common custom is to wash the outside of the glass with common whitewash, or a mixture of whitening and glue water. Some use muslin screens. Proper attention must be given to watering, and insects carefully looked after. Green-house plants out of doors must not be neglected. They will often be blown over. Camellias and all broad-leaved evergreens must be shaded. Make all repairs the houses need, and put up new structures.

Cold Grapery.

The outside borders should be mulched, and weak liquid manure given. The shoots should have already been shortened to the third leaf from the last bunch. The temperature of the house should not exceed 90° to 95° at midday, and fall to 85° at night. Thinning the fruit on the bunches is now an important matter. Use the slender scissors made for the purpose. One-half, or more, according to the variety, is to be removed. At the first appearance of mildew, make the air of the house as dry as possible, and sprinkle sulphur abundantly.

Darwin on the Variation of Animals and Plants under Domestication.

Probably no work ever published in this country met with a more cordial appreciation. We published it, not as endorsing Mr. Darwin's views, but to give the opinion of so eminent a naturalist to the American public in an accessible form. The notices the work has had have been most favorable, even those journals who are opposed to Mr. Darwin's views giving praise to this remarkable record of facts. As a specimen of the reviews we give the following from the *N. Y. Horticulturist*: "Written in admirable English, using no scientific terms but such as are comprehensible to men of fair education, lucidly arranged, and indexed with scrupulous care, there is not an agriculturist or horticulturist in the country who has any taste for the history or theory of his calling but will peruse it with pleasure and profit, and find it difficult to say whether he values it more as a storehouse of facts or as an incitement to observe and to think. Let the reader be of the learned professions, or a child or novice in all that pertains to natural history, he will find in this book food for thought and instruction, knowledge of animal and vegetable life, their origin and perpetuation in a healthy or unhealthy condition, and so mingled with anecdotes, observations, and originality, that its study will be a pleasure to every intelligent mind. The work is finely illustrated, and published in two volumes of over 500 pages each. Price, \$6, post-paid."

Fowls Roosting on the Nest Boxes.

—W. C. Brown of Sing Sing, N. Y., prevents this by fixing common telegraph wire along an inch above the edges of the nest boxes, and finds it perfectly effectual, while the hens will readily cross the wire to lay.

AMERICAN AGRICULTURIST.

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HALF A YEAR

On Trial.

This number begins the second half of the Volume, and the present is a favorable time for a large number of persons to begin a trial of the paper. We will this month receive six months subscriptions from July to December, inclusive, at half the annual rates, viz. 75 cents each, or four copies \$2.50; or ten copies for \$6.00, that is, 60 cents each. Will our friends please mention this matter to their neighbors? There are many who are not ready, or not willing to venture a whole year's subscription to start with, who would be willing to try it half a year. If the idea were suggested to them. We trust there are very few who have not got their money's worth during the past six months. The last half of the volume will certainly be equal to the first half. We shall be happy to receive at least one addition for every present subscriber. A paper of this kind will be a good thing to fall back upon during the coming months, when political excitement will largely monopolize the general newspapers.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for the month ending June 13, 1868, and for the corresponding month last year.

TRANSACTIONS AT THE NEW-YORK MARKETS.					
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Oats.
25 days 1868	118,500	57,000	2,652,000	61,000	74,000
25 days 1867	118,500	57,000	2,652,000	61,000	37,500
25 days 1866	118,500	57,000	2,652,000	61,000	37,500
25 days 1865	118,500	57,000	2,652,000	61,000	37,500
SALES.	Flour.	Wheat.	Corn.	Rye.	Oats.
25 days 1868	118,500	57,000	2,652,000	61,000	500,220,000
25 days 1867	118,500	57,000	2,652,000	61,000	141,000
25 days 1866	118,500	57,000	2,652,000	61,000	141,000
25 days 1865	118,500	57,000	2,652,000	61,000	141,000
2. Comparison with same period at this time last year.					
RECEIPTS.	Flour.	Wheat.	Corn.	Rye.	Oats.
25 days 1868	118,500	57,000	2,652,000	61,000	74,000
25 days 1867	118,500	57,000	2,652,000	61,000	37,500
25 days 1866	118,500	57,000	2,652,000	61,000	37,500
25 days 1865	118,500	57,000	2,652,000	61,000	37,500
SALES.	Flour.	Wheat.	Corn.	Rye.	Oats.
25 days 1868	118,500	57,000	2,652,000	61,000	500,220,000
25 days 1867	118,500	57,000	2,652,000	61,000	141,000
25 days 1866	118,500	57,000	2,652,000	61,000	141,000
25 days 1865	118,500	57,000	2,652,000	61,000	141,000
3. Exports from New York, Jan. 1 to June 13:					
Flour.	Wheat.	Corn.	Rye.	Oats.	Other.
1868.	403,550	2,280,805	5,250,000	153,000	29,000
1867.	403,550	2,280,805	5,250,000	153,000	29,000
1866.	403,550	2,280,805	5,250,000	153,000	29,000
1865.	403,550	2,280,805	5,250,000	153,000	29,000
4. Stock of grain in store at New York:					
Flour.	Wheat.	Corn.	Rye.	Oats.	Other.
1868.	1,155,727	1,336,171	51,469	575	57,264
1867.	1,155,727	1,336,171	51,469	575	57,264
1866.	1,155,727	1,336,171	51,469	575	57,264
1865.	1,155,727	1,336,171	51,469	575	57,264
5. Receipts at head of tide water at Albany, each season to June 24th:					
Flour.	Wheat.	Corn.	Rye.	Oats.	Other.
1868.	25,700	3,684,900	8,297,400	149,200	1,841,800
1867.	25,700	3,684,900	8,297,400	149,200	1,841,800
1866.	25,700	3,684,900	8,297,400	149,200	1,841,800
1865.	25,700	3,684,900	8,297,400	149,200	1,841,800

less activity in the line of Broadstuffs, which have been more freely offered; and, under less favorable advices from Europe, prices have been depressed, closing generally in favor of buyers. The transactions of the past week have been unusually light. The Provision trade has been very dull, though prices have declined materially. Some speculative activity was noticeable in Lard, early in the month, but it has subsided. Dutter and Cheese have been particularly tame, and, as lower prices are looked for, especially by exporters, there is little disposition to make free purchases at prevailing rates. Cotton has been very dull all the month, closing quite heavily, with a downward tendency. The demand for Wool has been very moderate, and prices have been depressed. The offerings have been comparatively light, but holders have been willing sellers. Seeds have been in moderate supply and limited request at drooping rates. Hay and Tobacco have been fairly active and rather firmer. Hops have been quite nominal in price.

CURRENT WHOLESALE PRICES.

	May 14.	June 13.
PRICE OF GOLD.		
Super to Extra State	\$5 10 00	\$7 50 00
Super to Extra Southern	10 10 00	15 50 00
Extra Western	10 10 00	15 50 00
Extra Eastern	10 10 00	15 50 00
Superior Western	10 10 00	15 50 00
LYE FLUTE	5 37 00	6 50 00
CORN MEAL	5 37 00	6 50 00
WHEAT—All kinds of White	20 00	32 00
All kinds of Red and Amber	20 00	32 00
CORN—Yellow	12 13 00	12 13 00
Mixed	12 13 00	12 13 00
State Western	8 58 00	8 58 00
State	Nominal.	Nominal.
LYE	2 00	2 10
BALDY	2 00	2 10
HAY—Bale 100 lb.	80 00	1 60
LOGS	1 00	1 00
RAILS	1 00	1 00
COTTONS—Middle, 5 lb.	29 50	31 25
Hops—Crop of 1867, 5 lb.	10 00	10 00
SEED—Clover, 5 lb.	10 00	10 00
Timothy, 5 lb.	10 00	10 00
Flax, 5 lb.	2 65	2 75
SCAB—Brown, 5 lb.	10 00	10 00
COFFEE—Rio, 5 lb.	9 00	13 50
TOBACCO, Kentucky, 5 lb.	8 00	20 00
Wool—Domestic, 5 lb.	42 00	60 00
Domestic, pulled, 5 lb.	42 00	60 00
TALLOW, 5 lb.	11 50	12 00
OIL—Coke, 5 lb.	32 00	35 00
Port—Mess, 5 lb.	27 50	33 50
Pine, 5 lb.	25 00	34 00
BEER—Plain mess, 5 lb.	15 00	30 00
LARD, in barrels, 5 lb.	38 00	45 00
BUTTER—Western, 5 lb.	44 00	55 00
State, 5 lb.	44 00	55 00
CHEESE	9 00	17 00
BEANS—5 lb. bushel	3 40	5 00
Peas—Canada, 5 lb. bushel	1 50	1 50
EGGS—Fresh, 1 dozen	22 00	24 00
POULTRY—Poultry, 5 lb.	15 00	15 00
POTATOES, old, 5 lb. bushel	40 00	50 00
Potatoes, new, 5 lb. bushel	42 00	60 00
APPLES—5 lb. barrel	40 00	60 00
CRABBIES—5 lb. barrel	40 00	60 00
TRUNKS—5 lb. hundred	6 00	8 00
CABBAGES—5 lb. 100	8 00	10 00
STRAWBERRIES—5 lb. basket	7 00	8 00

New York Live Stock Markets.

WEEK ENDING.	Bees.	Cows.	Calves.	Sheep.	Pigs.
May 18th.	5,125	95,287	13,991	19,544	48,132
May 24th.	5,125	95,287	13,991	19,544	48,132
May 31st.	5,125	95,287	13,991	19,544	48,132
June 7th.	5,125	95,287	13,991	19,544	48,132
June 13th.	5,125	95,287	13,991	19,544	48,132
Total in four weeks.					
21,917	504,110	62,646	82,564	107,409	161,064
Total for previous 4 weeks.					
21,917	504,110	62,646	82,564	107,409	161,064
Average per Week.					
5,479	126,027	15,661	25,852	26,852	40,266
Average per Week, 1867.					
5,479	126,027	15,661	25,852	26,852	40,266
Total in 1867.					
338,832	8,297,400	69,941	1,104,000	672,000	1,841,800
Total in 1868.					
338,832	8,297,400	69,941	1,104,000	672,000	1,841,800
Total in 1869.					
338,832	8,297,400	69,941	1,104,000	672,000	1,841,800
Total in 1870.					
338,832	8,297,400	69,941	1,104,000	672,000	1,841,800

The above table gives the weekly receipts for the four weeks ending May 11, the total number of all kinds for each week, also the number of each kind for the four weeks, as well as the sum of all kinds for the month. By comparing the averages for the past three months, it will be noticed that there has been a gradual increase each month in numbers in most departments. For the week ending June 13, the increase in cattle was over 1,000 more than the previous week, and quite glutted the market. With very few exceptions the quality has been quite even, and much improved over last month. Owing to a change in the market days at our different markets, the sales have been unsettled, and many bargains were made late in the day. There has also been great irregularity in the arrival of stock, and many fine droves sold at least 1¢ lower than they otherwise would. The report of heavy trains due, or just arrived at the other yards, which are 5 to 10 miles distant, would make the stock men anxious to sell, and give the buyer a long journey if he wished first to inspect all the animals. All this tended to make an uneasy market, with much fluctuation in the prices for the same grade of stock. At the close of our

report there is a depression and downward tendency.

The following list gives the range of prices, average price, and the figures at which the largest lots were sold:

May 18th	15 1/2 @ 18 1/2	Av. 17 1/2	Largest sales	16 1/2 @ 17 1/2
June 13th	15 1/2 @ 18 1/2	Av. 17 1/2	Largest sales	16 1/2 @ 17 1/2
June 1st	15 1/2 @ 18 1/2	Av. 17 1/2	Largest sales	16 1/2 @ 17 1/2
June 15th	15 1/2 @ 18 1/2	Av. 17 1/2	Largest sales	16 1/2 @ 17 1/2

Again we note a large supply of veal, with an increase of 10,000 in the number of hogs, and this, with the supply of fresh vegetables, has made quite an impression on the sale of cattle. On the whole, we think prices have declined at least 1¢, and possibly 1¢, for the same quality of beef. But few steers sold at the highest prices, and those were put on the scales at 57¢ @ 60¢ lbs. to the cwt., a little below the figure. Dealers complain of losing money in some cases quite heavily, and we think they tell the truth. The market days will have become settled by another week and we hope satisfactorily both to the seller and buyer. **Milk Cows.**—We have very little change to notice in these. The supply has been quite equal to the demand, and sales steady. There have been fewer poor, thin cows offered for sale, and prices averaged a little higher. There has been nothing really fine and worthy special mention offered. Good cows bring from \$70 @ \$80, medium \$60 @ \$70, and poor milkers sell slow at \$40 @ \$50. **Veal Calves.**—The supply has been plenty, and prices have worked down a little, on some days varying greatly for the same grade. There have been very few "Hog-dressed" for sale, and more offered alive. On the scales some of the very best have brought 11¢. Good calves have been sold every day for 9¢ @ 10¢, medium for 7¢ @ 8¢, while poor ones sell for 5¢ @ 6¢. **Sheep and Lambs.**—The market has been a little overstocked in this department and prices have run down, good lots selling as low as 7¢, their owners losing heavily. Some complain of a loss of \$300 on a car-load. The very best "tops" will only bring 7¢, and fair sheep may be had for 6¢. Prices range from 5¢ for poor to 7¢ for good. The week ending June 1st found the market glutted with sheep, and many car-loads remained unsold for the next week's trade. Prices have fallen at least 2¢ per lb., since our last report. Lambs are more abundant and sell at 9¢ @ 11¢. Things look gloomy, with little prospect of improvement until there is a check to the arrivals. **Swine.**—The supply has been quite sufficient for the demand and sales have been quiet, many car-loads remaining over each week for want of buyers. Prices have fallen at least 1¢ per pound on good hogs, while light common ones sell slow at less rates. Prices range from 7 1/2 @ 8 1/2 cents.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

How to Remit—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of Orange Judd & Co.

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe the *Registry* for, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. Buy and affix the stamps both for postage and registry, put in the money and seal the letter in the presence of the postmaster, and take his receipt for it. Letters sent in this way to us are at our risk.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be pre-paid at the Post-office where the paper is received.

The Book of Evergreens.—A practical Treatise on the Conifer, or Cone-bearing Plants. By Josiah Hoopes, From the N. Y. Horticulturist. Messrs. Orange Judd & Co., Publishers, Broadway, New York. Have just issued a book with the above title, which we take pleasure in commending as the labor of a scientific and practical cultivator. The subject is one of interest to all classes, inasmuch as evergreens play a very

Gold has been comparatively uniform in price, most of the month. The dealings in it have been at a moderate scale. The latest quotation was 140. There has been

important part in the decoration of our homes and in the shielding of them, as well as our orchards, from harsh, cold winds and storms. In both popular and scientific language the author describes the many species, and treats practically of their propagation, their hardiness, etc., in such a manner as cannot fail to make the work a necessity to every planter. Botanically we have long felt the want of just such a work as is here presented, and are thankful to the author for the care he has evidently taken in striving to arrive at correct names. The book is gotten up in the usual good style of its publishers, is abundantly illustrated with engravings, executed in a very superior manner, and cannot fail to take its appropriate place as a standard of authority on evergreens for this country. Price, \$3."

Aquarium.—S. M. Bateman, Va.—If properly constructed, the aquarium needs no change of water. The plants supply what the animals need, the animals help support the plants, and the water is kept in healthful balance by the two. The skill of the operator is shown in hitting this balance and in keeping the water always transparent and sweet. Rain water is the best to use in starting a fresh water aquarium. The size of the tank must determine the number of animals and plants that can be kept in it. Begin small, and determine by experiment what can be added. It furnishes a very interesting study, but it is quite impossible to teach the art by books. Aquaria are also made with salt water. See articles in the *Agriculturist* for Sept., 1896; May and Oct., 1897.

Range for Fowls.—"S. C.," Hudson, N. Y. Most dwellers in towns fail to give their hens room enough. A flock of a dozen ought to have a half acre, and half of this in grass, in order to gain the best results in breeding. They will lay some for a time, in confinement, but they will inevitably run down. Breeders for sale, especially, should be conscientious in giving their fowls plenty of range. The roosts should be well ventilated, and kept scrupulously clean.

Breeding from Young Fowls.—"J. V. M.," Barnegat, N. J. The flock will run down in size and vigor, if this is followed habitually. Pullets lay more eggs than old hens, but they do not lay so large ones, or make so good mothers. The cock should be two or more years old, and the hens at least two years old, for breeding. A rooster from another flock should be introduced every other year.

Poultry on a Large Scale.—"A. K.," Tiverton, R. I.—We have read some very interesting romances upon this subject, but have never seen a case of success. We do know of failures. Because a farmer with ample room can keep twenty hens, and raise two hundred chickens, it does not follow that he can keep two hundred hens and raise two thousand chickens on the same ground, or on ten times the space. The figures mislead sanguine people, and many learn, at great expense for tuition, that a few hens pay, and many do not.

Training Turkeys.—"H. H. C.," Kingston, Pa.—The attachment of these birds to their roosting places is not quite so strong as that of hens, but they have very strong memories of their feeding places. One of the best roosts they can have is a large pole, raised ten or twelve feet from the ground on crutched sticks. If the young flock is trained to roost on this, as soon as they are large enough to leave the mother's wings, they will seek it of their own accord. They should be regularly sought at night, and fed, and driven to one roost.

Cure for Gapes in Chickens. By A. L. Phoebus, Md.—Turpentine and goose-oil, mixed, rubbed on the wings and breast of the hen just before the chickens go to roost, is good for the gapes.

Standard Weight of Poultry.—"W. N. D.," Rochester, N. Y. We are not aware that any society, which offers premiums for poultry, has adopted any standard of weight for prize fowls. This is especially desirable in the birds that are raised for their flesh. We notice in a recent show in England a pair of turkeys that weighed 50 lbs.; a pair of white geese 54½ lbs.; White Aylesbury ducks 18½ lbs.; and Roan 19½. We like the suggestion, and commend it to the notice of all the Agricultural Societies. Birds that do not come up to some adopted standard should not have premiums.

The Percheron Horse.—Translated from the French of Charles Du Hays, author of numerous popular works on the horse. Illustrated, 100 pages, 12mo. Orange Judd & Co., 1898. Price, \$1.00.—The work is a report made to the French Government upon the breeding and rearing of this admirable breed of

draft horses. The demand for the Percherons, both for breeding and for labor, has been so great of late, that a well-grounded anxiety existed lest the district should lose its famous and durable breed of horses, being tempted by present gain to hazard its future prosperity. This book is written with the view of indicating how to defend the race against degenerating, to improve it in all its estimable qualities, and at the same time to enable the breeders of Perche to supply the ever hungry market. It discusses principles applicable to the breeding of work horses, that is, any horses except race horses and hunters. Interest in the Percheron has greatly increased in the United States as the breed has become better known, and every new importation adds to it, and to the firm friends of the breed. The book is arranged in three parts, namely: 1. The excellencies of the Percherons and their decline. 2. The means of bringing up the breed. 3. Information to strangers visiting Perche. It is illustrated with several fine engravings of horses and manes recently imported by Mr. W. T. Walters, of Baltimore.

Agriculture of Massachusetts. By C. L. Flint—1867—8.—The volume is made up of the Secretary's report of the discussions at the meetings of the Board of Agriculture and of the abstracts of returns from the agricultural societies. It embraces a wide range of topics, and shows the steady progress of agriculture and horticulture in the Old Bay State. The leading men of the State give much of their time to the promotion of these interests, and it is owing to their influence that so much has been accomplished on a hard soil, and in a climate that is often discouraging to the hopes of the husbandman. One of the interesting topics discussed is Prof. Vile's experiments upon the imperial farm at Vincennes, who thinks he has proved after ten years of observation that the cereals prefer manure, *nitrogen*, and leguminous plants, *potassa*; the roots, *phosphates*. In preparing a specific manure for these crops respectively, he would have the preferred article in much the largest quantity. He would add lime, which humus renders assimilable by plants. The volume is got up in the usual good style of the State Printers, Wright & Potter.

Trout Spawns.—"H. K.," Groton Centre, Ct. The trade in fertilized spawn is in very few hands, and, we think, is on too small a scale to promise sudden fortunes to any one. It will probably be a paying business, in a few years, to the men who have a sportsman's taste, and the requisite skill and patience to develop it. At present the fertilized spawn sell for ten dollars a thousand, and the young fish, of suitable size for transportation, for forty dollars a thousand, delivered at the depot nearest to the purchaser. A full-grown trout has from four to five thousand eggs. It will probably be cheaper to buy the trout to stock your pond than to attempt the rather difficult task of raising them yourself.

Summer Hatched Chickens.—"R. D.," Babylon, L. I. We have never succeeded very well with July and August chickens. They do better in September. But if a clutch comes in in summer, put the coop under the shade of trees, or in the edge of a patch of corn, where they will be screened from the sun. The critical time with them is the first month.

Warts on Cows' Teats.—This nuisance may be abated when the cow is dry more easily than when she is giving milk. Small warts may, however, often be removed by some simple application, which will give little or no pain. Moistening them after milking with strong saleratus water, applying a paste of wood ashes to the warts only, or touching them with almost any caustic in a way not to make them sore, will usually, but gradually, cause the warts to disappear. Very large warts should be first tied off, that is, have a wire or silk thread bound around them close to the teat, so as to prevent a circulation of blood; but this makes the teat sore and milking difficult. "N. C. B." writes that raw lined oil applied once a week will cure warts on cows.

Lime on Yard Manure.—C. C. Moore, Chester Co., Pa., asks: "What will be the effect of lime on barn-yard manure which I had spread previous to plowing under?" We answer, if the effect be, on the whole, good, it would surely have been better if the lime had been applied after plowing under the manure. Lime in contact with manures containing ammonia takes the place of the ammonia in its combinations, and the volatile alkali is free to go with the blowing wind where it listeth. In this case, doubtless a portion of the small quantity of ammonia in the manure would be disengaged, but unless the lime were to remain in contact with the manure a considerable length of time, there would not be much ammonia lost. One hundred pounds of common yard manure will contain one to two per cent of ammonia,

which is considered as worth about 20 cents a pound. The loss of one quarter of the ammonia would be equivalent to 5 to 10 cents on each 100 lbs.—or \$1. to \$2 per ton, estimated at the market price of concentrated fertilizers, which is fair.

Bone Mill Wanted.—"E. H. C.," writes: "I have searched the advertising pages in vain for a cheap, effective, and durable bone mill. Is there any thing of the kind? I can get many tons of dry bones for the gathering, and I need the nitrogen that is in them more than anything else in my soil. I want to reduce the bones to fine flour before using them, that the good that is in them may be made immediately available." Mr. C.'s want is very much like that of many others, and if no such mill exists, one ought to be invented.

Profits of Farming.—"A. C. T.," Worcester County, Mass. If the average profits are less than five per cent, it does not follow that the same men would do better by changing their business. There is more unskilled labor upon the farm than in any other calling, and that kind of labor has a hard time in any business. If some men make but two per cent by farming, others make eight on their capital and furnish themselves and their sons with remunerative employment all the while, which is one of the great advantages of farming. The remedy for unsuccessful farming is not a change of business, but a change of policy. Knowledge and skill pay as well on the farm as in the workshop or counting room.

Sour Milk for Hens.—Mr. Affleck says: "The very best food for young chickens and turkey poult, is sour milk curd, or clabber, boiled until tolerably hard, and the whey separates entirely. Mix with corn meal or 'little hominy.'"

China-tree Fences, etc.—Mr. Affleck of Texas writes: "I thought my experience and observation in live fences was tolerably complete, and especially in the South. Fences may be made in the manner proposed, (alluding to the article on this subject on page 19, Jan. No.) but I have never seen any that deserved the name. On the beautiful Bayou Rapides was a long string of capital fence, of living posts—china-trees 15 to 18 inches through—with cypress rails let in between. As it lay in the track of armies, it is probably now destroyed."

Sundry Humbugs.—"The Riverside Drawing Association."—J. F. Jones, and their Sewing Machines, are not to be found at the number given. We looked up the place indicated by the circular, and found a low grog-shop where several persons were engaged in a gambling game. If any one sends money to such a place as this, he does it at the risk of never hearing from it again. "Wright, Bro. & Co., although repeatedly closed by the police, are still 'on the make.'" The last investigation resulted in the arrest of one A. A. Kelly, of Kelly's Weekly, it being alleged that he was the prime mover in "Wright, Bro. & Co."... The Washington Library Co., in aid of Soldiers' Orphans, N. S. Read, Sec'y, under the management of Geo. A. Cook & Co., Bankers, No. 6 Clinton Hall, N. Y., has been spoken of before in these columns. Geo. A. Cook & Co., some weeks since retired probably "behind the scenes," and Read & Co. took up the business and are flooding the country with notices of prizes drawn. If questioned about the business they claim only to be receivers and bankers for said Washington Library Co., and give but little satisfaction. We have visited their "Banking House," and learned from them that by addressing A. J. Peters, 42 South Third-st., Philadelphia, the alleged responsible party, we could learn what prize belonged to our number, and then if we would deposit the money with them, they would order the prize sent. Accordingly we dropped Mr. Peters a letter, and here is the reply. "In answer to yours we will state that your premium is a house-lot, valued at \$300. By paying the percentage of \$10. to the receivers, Read & Co., No. 6 Clinton Hall, New York, a deed will be made out properly acknowledged, and sent in any name and to any address you may desire." Now, that is all very nice, and a house-lot is a good thing to have, but we failed to learn where the lot is located. It may be on Bargeat Beach, or on the top of the Rocky Mountains, and in either case not worth ten cents to anybody. One number we know of is for a deed of a house-lot in an unincorporated town in California. These may be very nice lots—on paper—but with our present knowledge, we advise all persons to shun any investment with any party belonging to or having any connection with Read & Co., or the Washington Library Co.,... Look out for H. Ballou Carter, in New Hampshire, and his "Automatic Needle-Thresher," which is no needle-thresher at all, but an enticing notice in regard to "Greenbacks," and more information guaranteed if one will only send him his address in full, and a three-cent stamp for reply. The "reply"

is two circulars, making great offers of counterfeit money, well executed, in lots of ones, V's, and X's, at \$5.00 per parcel. The object is to get the \$5 out of the foolish and heedless, and we need only warn them of the wickedness of the transaction, and the facts in the case. We know nothing of "Jewelry Peddlers" with "black horses" and "covered wagons," but advise all persons if they want silver-ware of any kind, or knives and forks, cotton or woolen fabrics, to send to some reliable firm in the nearest city, for every thing of the kind they fail to find at home. Such things always have a fixed value, and great bargains are not to be had from peddlers. Look out for Nursery Agents who come around to sell plants, nursery stock, &c. Every year we have complaints from victims to this class of swindlers. Also, don't invest in patent rights of any kind, especially hay-loaders, and other farm appliances. Nine out of every ten are worthless. Also look out for the Electric Insurance Co., and their lightning rods. Is anybody so verdant as to believe that Bally, Snyder & Co., will, for \$2.40, send 20 yards of Brussels Carpeting, simply because a man pays a \$3 annual subscription to the "World at Home," and besides this, send every month a sealed order or check entitling the subscriber to from \$2.75 to \$100 worth of goods, clothing, musical instruments, etc., etc.—the only conditions being that the recipient shall show the goods and tell where they came from. The following from the N. Y. Tribune, June 12th, shows that respectable men sometimes aid swindlers. "An esteemed correspondent, who is in a position that enables him to know whereof he affirms, assures us that highly respectable merchants are unwittingly standing between the authorities and the 'gift enterprise' swindlers. For example, the New-York Post-Office, which was recently authorized to detain letters addressed to spurious gift jewelry firms, defied the mythical firm of 'George A. Cooke & Co.' the privilege of a box in the General Post-Office building, and thereafter letters addressed to George A. Cooke & Co. were held by the Post-master, who might in this way have done much toward the breaking up of Cooke & Co.'s 'Riverside Orphan Institution' fraud. But at length Cooke & Co. threw dust into the eyes of the highly respectable banking firm of Smith, Randolph & Co., and secured from them a letter recognizing George A. Cooke & Co.—a letter which disarmed the Post-master, and compelled him to surrender the letters that he had detained. The next that was heard of George A. Cooke & Co. was in Essex Market Police Court, where a simple-minded Pennsylvanian, who had been victimized, told the old story of a lottery swindle. The public have a right to expect of our merchants that they shall know to what papers they affix their names." Perhaps this will account for the disappearance of Geo. A. Cooke & Co., as stated, and the coming forward of Read & Co.

Catalogues.—Dealers in plants, seeds, etc., have sent their catalogues and circulars so numerously that we find it inconvenient just now to make individual acknowledgments. The documents will, however, have their use when we prepare our Annals.

The Squash-Vine Borer.—A friend writes that covering the stem of the vine—laying it up to the first blossom buds, prevents damage by the borer.

The Weather and the Crops.—The season thus far has exhibited too close a similarity to the last, so far as regards the Atlantic Coast, to allow farmers to feel very confident of good crops. The prevalence of exceedingly wet weather has caused even potatoes to fail, in a measure, has necessitated the replanting of much corn, and has delayed plowing of many fields intended for corn, until so late that a crop is despaired of. In our immediate neighborhood, where corn is generally planted before the 20th of May, we know of much not gotten in until between the 1st and 13th of June. Grass promises well everywhere, so far as we hear, and winter grains have been benefited by the wet weather, if upon well-drained ground. Similar complaints of the prevalence of excessive moisture come from the upper Mississippi Valley, and Central Illinois, some of the farmers there complaining of their utter inability to get grain to market, on account of the state of the roads and of the unfavorable agricultural prospects caused by excessive rains. The intermediate country seems to be blessed with fine weather, and everything promises a favorable season.

Culture and Products of the Vine in Europe.—Messrs. Marshall P. Wilder, Alex. Thompson, William J. Flagg, and Patrick Barry, were a committee of the U. S. Commission to the Paris Exposition to report upon the vine and its products. Their report is published in the Monthly Report of the Dept. of Agriculture for March. These gentlemen visited the celebrated vine districts, and gave an interesting account

of what they saw. Vine growers can doubtless obtain this report by applying to Commissioner Capron.

Barn-Yards in Summer.—"E. H. A." Hadley, Mass.—The yard should be supplied with fresh sods, loam, peat, or muck, as soon as it is cleaned out. There is great temptation to neglect this, in the hurry of summer work; but every farmer loses money rapidly, who neglects it. Cart into the yard anything that will make an absorbent—wreeds, saw-dust, corn stalks, hay, and swamp grass. Plow the yard frequently.

Shade-trees in Pastures.—"A. S. D.," Colchester, Vt. "Ought they to be cut down?" Not if you are a man of taste or humanity. There are good farmers who advocate treeless pastures, and think it better for the cattle to rest only at night. We think otherwise. The art of making cattle profitable lies mainly in keeping them comfortable. They seek the shade, enjoy it, and thrive under it. Let them have it, and beautify the landscape with clumps of trees.

Apple Worms.—"G. H. N.," Gaines, N. Y. We have never found any remedy so effectual as to keep hogs in the orchard, to pick up the fruit as fast as it falls. The moth lays its eggs in the blossom end of the apple when it is small, and the fruit ripens prematurely. If the injured apples are all gathered by the swine, or otherwise, the worms will be kept in check.

The Best Time to Cut Grass.—"J. D.," Orleans County. Cut the grass when in bloom, whether it be Timothy, clover, or red-top. This is the best usage, followed in all the States, and is as well settled as any fact in agriculture. We may not be able to state just how much better the hay is, but the difference will justify any reasonable extra labor, to cut the grass at the right time. Hay made a month out of date is poor stuff.

Cotton Seed Cake and Oil.—"M. S.," Charleston, S. C. We know of no objection to your making oil and cake in your city. The demand for the oil and cake is steadily increasing, both in this country and in England. The oil is quoted in the Liverpool market at \$1.17 a gallon currency, and the cake $\frac{1}{2}$ ¢ a ton, gold. All that is wanted is the machinery, capital, and the requisite knowledge, to make the business pay.

Action of Gypsum.—Marius Heighon of Ohio asks: "Will you please tell me through the *Agriculturist* if plaster or gypsum acts as a stimulant on the land? Some say it acts upon the land as whiskey upon man." Gypsum acts upon the plant, rather than on the land, as lime may be said to do. It is stimulating, inasmuch as it promotes especially in some plants a healthy and vigorous growth. It does not stimulate like whiskey in any sense, for plants stimulated by gypsum exhibit only a healthy growth—strength to send their roots farther and deeper, to mature more seed. Marius adds: "I have 14 acres of land too far off to haul barnyard manure upon; 5 acres of this is planted with wheat, and I need a fertilizer." Your case is simple. Sow clover on a well-mulched soil, and top-dress with gypsum. The clover will make a tolerable stand next year and might be turned under, but it would be much better to wait. Feed it off with beef cattle or sheep once or twice, not allowing it to be bitten down too close, and next season turn it under, applying a good top-dressing of lime, after plowing.

Woodward's Record of Horticulture, No. 2. Edited by Andrew S. Fuller. In this volume Mr. Fuller reviews books, proceedings of societies, fruits, trees, plants, implements, etc., in his characteristically independent style. It is lively reading, and while it bears the marks of hasty preparation, it contains much that is valuable to the amateur or professional horticulturist. A very complete horticultural directory adds much to the value of the work. Sent by mail for \$1.00.

Drying Fruit.—There are several "Patent" fruit drying houses sold by the dealers in agricultural wares. We gave in June 1896, an easily constructed drying house, and in July 1897, a more complicated one. All that is needed is a contrivance for passing a current of hot air over the fruit. Any one of the least mechanical tact can contrive the means for effecting this. The house of which we gave the plan in June 1896 is easily built and will dry a large quantity of fruit very rapidly.

The Strawberry Crop.—We go to press too early to be able to print a general account of the strawberry crop. Our western exchanges give very melancholy news. The *Prairie Farmer* says: "From

all parts we get news of a poor strawberry crop." Coleman's Rural World says that in Southern Illinois, "There is not half a crop." The continued rains at the East are having a most disastrous effect on the fruit, and at the present writing, it looks like a failure in all parts.

Thunder and Lightning.—The season of thunder storms is at hand, and as the security which a good lightning rod furnishes, though not complete, is nevertheless considerable, and thoroughly established, the time is an appropriate one for us to correct an error which occurred when we described that model New England barn, built by David Lyman of Middlefield, Conn. Mr. Lyman's judgment in these practical things is excellent, and after he had thoroughly examined both the principles and the mode of construction of the various patterns of lightning rods, he adopted the Otis Patent rod as the best, and with this the famous barn is protected. It seems, going by contraries, that the name of the rod he liked the least was running in his mind, and he gave us thus the wrong name, believing his own judgment, and discrediting his favorite rod. So at his request we set the matter right with our readers. The rod approved by Franklin was a large rod of iron, capable of carrying an ordinary discharge safely to the ground. This was armed with three or more points at the top, which tended to draw off light charges gradually, but heavy ones were frequently carried down visibly, tearing the earth at the point where the rod entered—or, impatient of being confined to so narrow a rod, they left the rod, took their own destructive way to the ground. The present approved plan is, use perfectly insulated rods, having several single incorrodible points at different parts of the house, to attract and quietly draw off the electricity, so that there shall be no flash of lightning perceptible. All rods should descend into the soil to a point constantly moist.

Prolific Sow.—James Bell, of Blooming-ton, has a sow that farrowed a few weeks since, dropping 19 pigs, which, when we saw them, were 4 weeks old and doing well. She can take care of her twelve.

Hard Milkers.—If the hard milking is due to a peculiar closeness of the end of the teat, the practice of inserting a steel wire hammered flat, about a quarter of an inch from the end, and the edges ground sharp, is sometimes followed with good results. This is a thrust an inch or so into the teat once or twice, and a small quill with a closed end put in and left a few hours. The operation should be very carefully conducted, so as to do no injury. There is occasion for something of the kind being done when one teat alone milks hard.

Canning Apples.—Aunt Prudence says it is no more trouble than to dry them. They are nicer and ready for use without soaking. They are a tip-top article, and no one need cry for peaches, with the store-room well stocked with canned apples.

A Tin Strainer.—Aunt Prudence says every housekeeper should have one for gravies, hops, and many other uses. Any tin and sheet iron worker can make one. A basin 8 inches in diameter and 3 inches deep is a convenient size. Put in a strainer bottom and a firm handle, and it is ready for use.

Corn in Drills for Fodder.—"H. G. T.," Bricksburg, N. J. It may be less trouble to sow broadcast, but not nearly as much fodder will be yielded to the acre, and it is not so easily cured, if it is not all wanted in the green state. If the soil is not in high condition, it should be well manured. Sow in drills three and a half feet apart, about forty kernels to the foot, and cultivate every week until the corn spindles. It is a great safeguard against a drought in the pasture, and an excellent fodder for all kinds of farm stock.

Mass. Agricultural College.—This young institution seems to have gotten bravely over the dangers of infancy, and to be rejoicing already in a sturdy youth. The fifth annual report gives the names of 56 students. The course of study appears very judicious. President Clark and his assistants are obviously men to succeed. The report is accompanied by photographs of several of the new buildings—the Dormitory, Laboratory, Botanic Museum, and Duffee plant houses—exhibiting different styles of architecture, and a little of the surrounding grounds.

The Fair of the N. E. Agricultural Society is to be held this year during the first week of September in the city of New Haven, Conn. New Haven is easy of access to most parts of New England, and close enough to New York to attract both exhibitors and spectators, and the city and its surroundings offer many attractions aside from the fair. We congratulate the society on this choice of a location.

Keeping Good Bulls.—Bulls are not very expensive animals to keep. They should begin to earn their living as breeders when eighteen months old, and from about the same time may be worked to good advantage, as steadily as the farm horses. Let them draw in single harness by a padded strap across the forehead, to which chain or rope traces are attached—back strap and breeching, if necessary, being simple and strong. Keep, of course, only full-blood bulls of some sort. Charge not less than \$5 for service. Your neighbors will say it is too much. Never mind. If they say they would pay it willingly could they be sure of better calves, tell them you will give them \$3 each for their bull calves at three days old. We know of this plan being followed to the great benefit of the stock in the neighborhood, while the bull owner rarely is allowed to buy the bull calves for fattening, unless he engages them positively beforehand, and insists on his bargain.

More Butter and Less Cheese.—A correspondent in Alleghany Co., N. Y., writes: "Factories around here are commencing with a less number of cows than last year, as many farmers think that butter is going to pay better than cheese." Of course, it depends on the relative price of cheese and butter. With cheese at 14 cents, and butter at 10 cents, it is doubtless more profitable to keep the milk at home and make butter rather than to send it to the factory. It is equally certain that there can be no export demand for butter at these prices, while there is a steady demand for our cheese. If the supply of butter should exceed our home demand, prices would fall to a price at which it could be exported; and the quality of our butter, as a general rule, is far below that of our cheese, and it would have to be sold at low figures. Sure profit lies in making a first-rate article.

To Prevent Milk Souring.—We know that bisulphite of soda and the similar salt of lime are occasionally used to prevent milk turning sour. The quantities used are very small, but with the ill-judged secrecy which leads some men to keep to themselves facts which might benefit their neighbors, some people keep the quantity a secret. It will be very easy for any one to determine the desirable quantity by beginning to use very little of a dilute solution in one pan, day after day, and seeing what the effect is. Whether the effects are desirable or not, on the whole, we do not know, but no harm will be experienced from using the milk not so strongly impregnated with the salt as to be noticeable.

Domesticating the Antelope.—"C. K., Dutchess County. We are not aware that any attempt has been made in this country to breed these animals. Lord Derby introduced the Camo, or Eland, the largest of the Antelopes, into England, in 1861. These animals, with a single exception, have been perfectly healthy, have produced young, and the progeny are said to be larger and stronger than the parents. They feed in the pastures with other cattle, and require no extra care. One killed for the table weighed 1,185 pounds. The flesh was delicate and of fine flavor. No doubt they could be introduced here and would thrive. The profitableness of the enterprise can also be determined by experiment.

A White Mouse, belonging to "D. A. O.," Erie Co., Pa., eats her young ones every time. We suggest as a cure the same treatment we would recommend for a sow—another omnivorous animal occasionally liable to do the same thing; namely, feed almost exclusively roots and fruits several days before littering. Carrots, raw potatoes, and sweet apples, are a good variety.

Cat Phenomenon.—"F. R. M.," Mystic Bridge, Conn., has a cat that has adopted two young gray squirrels, and is nursing them with her own milk. The squirrels were captured before their eyes were open, and the old cat was as blind as her nurslings, as to the deception practiced upon her.

Bes in July, by Wm. W. Cary.—Loes is frequently sustained by neglect to give thin, unpainted hives some protection from the sun. When the temperature rises above 100 degrees in the hive, bees cease labor and cluster outside, thus losing time. It is a not infrequent cause of new swarms deserting. Swarms issuing this month, unless they are strong, should be suitably aided, united, or returned to the parent stocks. Swarms sometimes cluster in places from which the ingenuity of experts is taxed to dislodge them. The following from J. R. Leisepberger, in the American Bee Journal, will be found applicable to a variety of cases. "To keep natural swarms from deserting when they issue, and induce them to settle in a manner convenient for hiving, I take two or three frames filled with comb, adjust them together at the distance apart at which they are usually set in the hive, and fasten them to a light pole of convenient length. When the swarm issues I present this

to the bees ten or twelve feet in front of their hive, and they usually betake themselves to it without hesitation or delay. If the swarm has already settled on a tree, it can commonly be induced to take possession of the combs, by placing the apparatus gently over or against the cluster. Even if settled in a hedge, otherwise difficult of access, they will readily remove to more acceptable quarters, if the frames be presented to them through an opening in the hedge made by drawing the branches asunder. When the bees have taken full possession of the comb, they are not apt to leave; and the frames may be again separated and set in a hive in the usual manner, with the bees adhering to the combs."

"Artificial Impregnation."—The Kohler process for securing the impregnation of queens with any given stock of drones is a recent discovery, which is exciting great interest in Europe. It is now known to a few of our leading Apianians, who are testing it thoroughly in practice, and has its importance for those interested in bee-breeding, which is becoming a distinct branch of business from honey producing; the same as breeding fowls is conducted as a distinct business from raising poultry or eggs for market.

The Wild Pigeon Kills Insects.—Mr. Reid says: "I shot some this past summer, one of which had 43 caterpillars over an inch long in its crop. It was a young one." This is some compensation for the damage done to the newly sown wheat crop by this bird. We are always glad to get facts in natural history.

Color of Dorking Chickens when First Hatched.—It is an old saying that any color is admissible and correct in a colored Dorking, save black and white. Many chickens hatched apparently white become gray and silver gray, and apparently black ones become the dark birds that are so much admired.

Hong Kong Geese.—"G. N.," Newport, R. I. They are a good variety, and as easily kept in inclosures as the common goose. They cross readily with it, and make a fine large bird. The only objection brought against them is their noise, which has not weighed much with poultry men from the time of old Rome downwards.

Curiosities of Fish Hatching.—At the Hatching Works in Charlestown, N. H., they have a blind trout, and one perfectly white—so transparent when young, that one could see the heart throw the blood at each pulsation through the whole body. They have a double-headed salmon, and a good many specimens of trout doubled in one part or another.

Selling Eggs by Weight.—"E. F.," Windsor Locks, Conn. We do not know of any exception to the rule of selling eggs by the dozen or piece. The sale by weight is the only fair thing, and ought to be recommended by farmers' clubs and agricultural societies.

Hens Eating Eggs.—"D. I.," Michigan. "Is there a cure?"—We think there is, in allowing them to run at large, if they are confined, or in giving them plenty of animal food, and broken oyster shells, or bones. This bad habit is generally contracted in close confinement, and indicates the need of a change of diet. They will follow their instincts, and eat eggs, if the constituents of eggs are not furnished in some other form. The cheapest kinds of fish or flesh will be greedily devoured.

Coal Tar on Cloth.—"W. T." asks if cloth can be water-proofed by means of coal tar, and be flexible. When the tar gets thoroughly dry, the cloth can not be very flexible. We have no experience in the matter, except seeing the effect of coal tar on some fishermen's seines, which were utterly ruined by it.

Lightning Rod Swindlers.—The "Girard Electric Insurance Company" are again operating in some parts of the West. They impose upon the public by means of fraudulent contracts. The "Agents" visit farmers and others, propose to put up lightning rods on their buildings, and warrant them good for five years for a specified sum, usually from \$5.00 to \$30.00. Thus far, every thing appears to be well enough, but having agreed to employ them, they present for signature what is represented to be an application for insurance, but in reality is nothing more or less than an agreement to pay them 40c. per foot for the rods put up. The unsuspecting farmer allows the men to go to work as if put up the rods, and does not find out that the job is an expensive one until the collector comes around some weeks later and presents his bill for ten times the amount supposed to be agreed upon. If the victim deniers he is shown the contract with his name at the bottom. Some parties have been foolish enough to give their notes for the amount when it was not convenient to pay the money down; others have stood out and positively refused to

pay more than the specified sum agreed upon, and after repeated threats of law-suits, the "Company" have compromised rather than present their claim before the bar of justice. Our advice to every one who feels that he has been swindled by one of these lightning rod chaps, or by any other traveling swindler, is to appeal to the nearest Justice, if he is not a fool. If one is ashamed to have it known that he has been hoaxed, and would rather skulk out of the scrape by paying these swindling bills, he will do so; but a true man will fight it out and win, if there is any justice to be found in his country. If one needs lightning rods, let him get them put up by responsible parties. Don't employ traveling agents. The whole matter is so simple that we have not, perhaps, given it sufficient space in the *Agriculturist*. An iron rod costing 3 cents a foot, with a sharp end in the air and the other in the ground, is all that is needed. We will try to give more on a subject about which there is so much nonsense.

Leached Ashes.—Mr. M. S. II. says: "I can get soap boilers' ashes for \$1 per load. Will it pay to use them?" Probably not, on your strong clay loam—that is to say, you can probably use other and cheaper means of enriching your land. Where leached ashes can be obtained in the immediate neighborhood, at 50 cents or even a dollar a load, it will pay well to use them; but to pay a dollar a load, and then draw them three miles will probably leave but little profit. In Western New York, we have known ten two-horse loads of leached ashes applied per acre, to wheat, with excellent effect. Now the leached ashes of that section are shipped hundreds of miles to Long Island. Where you can grow large crops of clover by the use of plaster, leached ashes should be purchased at cheap rates. They can be used to great advantage, if they do not cost too much.

Gas Lime.—Notwithstanding our rather frequent notes about gas lime, inquiries constantly come in regard to its use. Those who use it should bear in mind that it is, when fresh, strongly alkaline, and somewhat caustic, so that it must not be mixed with animal manures; that it contains poisonous and soluble substances which are destructive to vegetation; that these, after sufficient exposure to the air become changed, and either innocent, or positively useful; and that in addition to the effects of lime as such, exercised in a moderate degree, those of gypsum are also produced very markedly. It is therefore to be regarded as a cheap source of gypsum for agricultural purposes, and always used with caution.

Trial of Hay Implements.—The New Jersey State Agricultural Society will hold a National trial of mowers, reapers, rakes, tedders, horse-forks, etc., commencing July 7th. Full particulars will be given by addressing the Secretary, at Newark, N. J.

Cabbages Affecting the Taste of Milk.—"Young Farmer." Cabbages, or turnips, if fed too constantly to cows, will alter the taste of milk, and this is true of all milk, and some other kinds of fodder. But if the cabbages or turnips be fed only once a day, immediately after milking in the morning, and the cow has a plenty of other feed, the milk will have no unusual taste. Milk cows want a good variety of food. Both cabbages and turnips increase the flow of milk, but do not add to its richness so much as do carrots or parsnips.

Am. Devon Herd Book.—Mr. H. M. Sessions, of South Wilbraham, Mass., is about to publish the second volume of the American Devon Herd Book, with about 600 new pedigrees. This is issued under the auspices of the Am. Cattle Breeders' Association, and it is understood that all the pedigrees are, before acceptance, subjected to the searching scrutiny of an impartial committee of breeders. This beautiful and useful breed is holding their own well, and are valued as highly as ever by their breeders. Registry in this volume will add to the value of the cattle in a way which should lead every Devon breeder to send in the pedigrees of all his best stock.

Stair's Family Scales are very convenient, and sufficiently accurate for ordinary purposes, if care be taken to always have the article to be weighed placed squarely over the upright or supporting shaft. If moved to the front or rear of the dial, a difference in the weight will be noticed. Experience in their use, with observation, will, in a measure, enable one to remedy this, apparently the only defect in the scales.

Doughnuts.—By Jane E. Duffie. Take one pint of strained buttermilk, 1 teaspoon of sugar, one egg, one teaspoonful of soda, and a little salt. Add flour enough to make a stiff dough.

Sally Linn.— $\frac{1}{4}$ pints of flour, $\frac{1}{2}$ cup of butter, $\frac{1}{2}$ cup of yeast, 2 eggs, 1 tablespoonful of sugar, and $\frac{1}{2}$ cup of milk. Mix about five hours before needed,

Collecting Birds' Eggs.—Willie G. Machias, Me. The wanton destruction of birds' nests is reprehensible; but collections of eggs for the sake of learning the habits and characters of the birds are very desirable. You should take out the contents of the eggs at the smallest possible hole, and where it is practicable, preserve the nest with the eggs. It is desirable to have a cabinet or set of shelves on which the nests may be set in order, with their scientific and common names. A collection of the nests and eggs of the birds of your region would have a pecuniary value in the city, and if you have duplicates they can be exchanged for those of other regions. It is very profitable for boys to study natural history, and to make a record of their own observations.

The Butterflies of North America. with descriptions and colored drawings by Wm. H. Edwards, Philadelphia; the American Pomological Society. This is one of the most elegant works ever published in the country. It is issued in numbers, each of which contains five plates, giving from two to five butterflies of life size, and most exquisitely colored from nature. The descriptions are very full, and the work bears the marks of great thoroughness in all its parts. The work is intended to include the new species, and the older ones that have heretofore been inaccurately described and figured. The price per part is \$2, to be had of E. T. Cresson, 518 South 13-st., Philadelphia.

The Parasites of the Honey Bee.—It is well known that our larger domestic animals, from horses and cattle down to canary birds, are affected by various internal and external parasites, but that a large number of parasites trouble the honey bee will be a novelty to most persons. Dr. Packard, in the June No. of the American Naturalist, gives an account of some of these parasites, which infest the larva and the perfect insect. The most interesting part of the article is that which ascribes "foul brood" to a parasitic insect. The subject is one of interest to bee-keepers, and Dr. Packard, American Naturalist, Salem, Mass., would be glad to get specimens in aid of him in the study of these parasites, either in the honey-bee or our native bees and wasps.

What is the Proportion of the Sexes?—Every fact bearing upon our domestic animals is of great importance to Mr. Darwin. He writes as he finds it very difficult to obtain information as to the proportional numbers of males and females which are born to our various domestic quadrupeds and birds. It is very rare that records of this kind have been kept. Yet there are here and there curious observers who have noted these facts. If any such will send us their observations we will gladly forward them to Mr. Darwin.

Do Martins Injure Trees?—"W. C. C." Natick, Mass., says that his neighbors complain that martins injure pear trees by plucking off the tender leaves. Mr. C. has 70 trees, and thinks the injury done by the birds is more than offset by the good they do in destroying insects. We have martin boxes in great numbers, but never saw the birds trouble the trees. What is the experience of others?

Tansy for Borers.—"P. H. J.," gives for borers "my way and my father's way before me for over 60 years. Be sure that there are no borers in the trees when planted, and with each tree set out a small bunch of Double Tansy." This is an old remedy, and we give it here more briefly than our correspondent has done, for the purpose of calling out facts. These old notions are not to be passed by without investigation, though the truth that may be in them is often quite different from that assigned by their advocates.

Slugs on Cabbages.—"E. O. W.," Bethany, Pa. You will find the slug girdler and described in the *Agriculturist* for July 1896. Lime; traps made by laying a lettuce or cabbage leaf flat upon the ground, to be taken up early in the morning; and allowing ducks to have the run of the patch, are the chief remedies.

Malice among Plants.—"Miss Bluebird" asks "Is there a plant or flower known by the name of Malice?" Among the corruptions of plant names, Malice has sometimes been changed into Malice—just as Elocampne is called "Yallercompne," and Spikenard, "Spiguel." Such corruptions as these are common both in this country and in England.

Early and Late Peaches.—Mr. Thomas J. Pullen, son of the late Isaac Pullen, Hightstown, N. J., has sent us some specimens of Hale's Early Peach from his orchard house. Hale's Early now takes the first rank on all the fruit lists, and Mr. P. is warranted in say-

ing: "The tree is a strong grower, ripening its fruit ten days to two weeks in advance of the Troths, which heretofore has been the earliest market peach at the North. The flavor is excellent. For orchard house culture I consider it superior to any of about thirty varieties which I have tested. I also hand you a colored lithograph of the Salway, a peach but little, if at all, known in this country. The specimen from which this lithograph was taken was grown by my late father, Mr. Isaac Pullen. He was much pleased with the fine qualities of this peach, and predicted a great reputation for it. It is a large yellow freestone variety, highly colored, an extraordinary bearer, and of good flavor. Its chief recommendation, however, is its lateness. It comes in after the Smock (which has been for many years the principal late peach), and this lengthens the peach season about ten days." The lithograph of the Salway is really beautiful, and if the peach is equal to its portrait, it must be fine indeed. We are quite willing to believe what Mr. Pullen says about peaches, and when he shows us the fruit, we may have more to say about the Salway.

A New Dwarf Arbor Vite.—Mr. A. G. Burgess of East New York, has a remarkably dwarf variety of the Arbor Vite, which he calls "Commodore Nutt." It is not only very dwarf, being but 4 or 6 inches high, but is very bushy, branching below ground and rooting at the base of the branches like box. Like all these very dwarf forms of Arbor Vite, this has only the long early leaves. It is perfectly hardy at East New York, and will doubtless be serviceable for edgings. We have tried a piece of edging set with it, and hope to report of its success.

Best Soil for Pear Trees.—Morristown, N. J. A heavy clay loam. It is a waste of labor to plant them on sandy or gravelly soil, unless there is a heavier subsoil beneath. This frequently happens, and the sand may be corrected by bringing a part of the clay to the surface. Plant standards.

A Troublesome "Grass."—J. Fraitz, Lancaster Co., Pa., sends a specimen of a "grass" that is getting to be very troublesome" in his vicinity. It is not a grass at all, but a Carex or sedge; the specimen is too young to determine with accuracy, but probably one of the forms of *Carex laxiflora*. We never knew this or its relatives to become annoying as weeds, and the only present advice we can give is to treat it like other weeds.

Railroads and Horticulture.—Paul Grable, of Dutch Flat, California, writes us an account of his orchard, where most fruits flourish at the altitude of 8,300 feet above the sea. It is near the Pacific Railroad, though a thousand feet below it. Last year he sold to the passengers on the railroad, cherries, the crop of one tree eight years old, for \$112, which is good for both Paul and the passengers.

A Law to Protect Fruit Growers.

—It will be seen by what follows, that the last Legislature of New York passed a stringent law against the poachers and vandals who have hitherto been a source of constant annoyance to all growers of fruit. Such a law is needed, and should be enacted in every State and Territory. Nothing is more vexatious than to carefully tend a choice tree and watch its maturing fruit, and when it is just ready to be tasted and tested, to have it snatched away by some graceless vagabond, and perhaps the tree itself mutilated. The law makes the owner of the fruit trees or his employees special policemen or constables, with full power to arrest, and hold the poachers in custody.

CHAP. 645.—AN ACT to provide for the more effectual protection of fruit growers against trespassers. Passed May 6, 1893; three-fifths being present.

The People of the State of New York, represented in Senate and Assembly do enact as follows:

SECTION 1. Any person who shall at any time enter upon any orchard, fruit garden, vineyard, or any field or enclosure wherein is cultivated any domestic fruit whatever, and which is kept for such purpose, without the consent of the owner or occupant thereof being previously had and obtained, and with intent to take, or destroy, or injure anything there growing, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished as in such cases provided by law.

§ 2. Any person who shall willfully cut down, destroy, or in any way injure any tree, shrub, or vine, within any enclosure or field wherein is cultivated any domestic fruit whatever, and which is kept for such purpose, or shall injure any building, trellis, frame work, or any appurtenance belonging to or upon any such field or enclosure, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished as in such case provided by law.

§ 3. It shall be lawful for the owner of any orchard, fruit garden, vineyard, or any field or enclosure wherein is cultivated any domestic fruit whatever, or for any per-

son employed in the cultivation of, or rightfully in the possession of any such field or enclosure, to arrest and detain in custody and convey before any magistrate of the county wherein such arrest is made, any person who may be found violating any or either of the provisions of this act.

§ 4. All fines imposed under the provisions of this act when collected shall be paid, one-half to the owner of the field or enclosure wherein the offence was committed, and one-half to the overseer of the poor for the use of the poor of the county in which conviction is had, and on non-payment of any such fine, the defendant shall be committed to the common jail of the county for a period of not less than thirty days and at the rate of two days for each dollar of the amount of the said fine, and costs in addition thereto.

§ 5. This act shall take effect immediately.

Potato Beetle Specimens.—Mr. J. Halmeyer, Houston Co., Minn., sends us specimens of the 10-lined potato beetle, neatly framed in birch-bark, the whole being much more ornamental than we supposed such a troublesome insect could be.

That Willow Peeler.—Several parties have written to ask where a good willow peeler may be obtained. The parties manufacturing such an implement would do well to answer in our advertising columns. We do not know where they are now located.

Central Park Animals.—The collections of zoological specimens in the New York Central Park include both domestic animals and wild ones, most of the wild specimens being such as represent our native Fauna, and we have repeatedly had drawings made of them. This number of the *Agriculturist* happens to contain three representations derived from this very attractive feature of the Park. The Commissioners are constantly increasing their facilities for keeping and exhibiting animals, and we confidently anticipate that, with the gradual and healthy growth with which the collection has so far progressed, before many years we shall rejoice in a zoological garden, which, for utility and instructiveness, at least, will rival the great collections of Europe.

The American Farmer's Magazine.—We have to welcome another new paper, the first number of which comes to us with the above title. It is in the magazine form, with 32 pages, and published monthly at Cincinnati, by Charles S. Burnett. The first number presents a creditable appearance, the mechanical execution being good and the reading matter sound.

The Bone Phosphate of South Carolina.—"H. G.," Maryland. We have not yet seen the article, and are not aware that it has been put upon the market. The deposits are said to be found in the tide-water bottoms of the Ashley, Cooper, and Stono Rivers. They are said to be made up principally of the bones of dead animals, and to contain 51 per cent of bone phosphate. Reckoning their phosphoric acid at 53 cents a pound, the pure article would be worth \$35 a ton.

Preventive of Lice on Cattle.—"W. F. G.," of Saratoga Springs, writes that if one part of sulphur is mixed with three of salt, and the usual amount of salt feed so mixed, fed to cattle, horses, and sheep, it will be something unusual if louse or tick can be found. He bases his communication upon 20 years' experience.

White Willow for Fence.—"A. S.," Perry Center, N. Y. A good fence may be made by planting so thick as to turn cattle, and cutting the young trees about six feet from the ground, after they are three or four years old. They will sprout from the top of the stumps, and if thinned out the sprouts will make nice poles for fencing or other purposes, in a few years. Or the young trees may be set several feet apart, and the gaps be closed by planting after two or three years. The first is the more common method, and the better if the trimmings are considered of any value.

Wire Fences.—C. O. Howard. If made of large wire and iron posts, they are much more expensive than wood, and no better to turn cattle. The cheap wire fences soon get out of repair, and we do not recommend them. A wood fence or hedge is the best thing for you.

A Row Boat for Fresh Water Ponds.—"C. W. H.," Neshaunack Falls: If the object is a boat for exercise and fishing, a flat bottom is the better pattern. The sides should flare a little and taper from the middle to both ends. The bottom, also, should curve about 1 foot in 18, to bring both ends out of water when launched. Any carpenter can make a boat that will answer your purpose. The seams should be "piped" with pitch. It should be laid up under cover for winter.

Harvesting Barley.—Our friend who "Walks and Talks," sometimes has what old Ned Dexter called an "arter-clap." The following, intended for a part of Walks and Talks, came just too late to go in its proper place: "The plan of harvesting barley recommended by a correspondent of the *Agriculturist* last month (June No., page 219), is new to me."

"I think it would work well on oats cut early for hay. But I should dislike very much to cut wheat or barley in this way. Barley cut so early that the horses and machine would not hurt it, is not ripe enough; and as it is cured so rapidly from being spread out on the ground, there is no chance for the grain to ripen by the absorption of sap from the straw—as is the case when it is cut green and bound up in sheaves, and allowed to stand in the shock. The experiments quoted by Prof. Johnson, in the *Agricultural Annual*, p. 75, 1867, throw great doubt on the propriety of cutting grain in as green a state as has been recommended for some years. But aside from this, it has always been deemed necessary to let barley get ripe before cutting, in order to insure that evenness in the state of maturity so necessary for malting purposes. "The only method," says an experienced Scotch barley grower, John Haxton, of Fife, "in which this point can be attained, is that of allowing the crop to attain perfect ripeness, which is indicated by the dryness of the grain when squeezed, and by the hanging down of the ear. It is, undoubtedly, an evil to allow the crop to ripen so far; but, excepting where circumstances are particularly favorable to an even growth, the practice is, we fear, a 'necessary evil.' The best way of harvesting barley unquestionably is to cut it with a reaper and bind it up into sheaves, and shock it just as you do wheat. The first cost is greater, but you save a good deal of barley that in any other method is lost among 'ordinary stones and clods.' The next best method is to throw it off the reaper into good-sized bunches, and cock it up with a 'barley fork.' But when barley brings a good price, better screw your courage up to the binding point. It will pay. When once in shock it is comparatively safe. Rake the stubble with a steel-toothed rake, but keep the rakkings separate, as they are apt to be weather-stained."

Oats and Barley.—H. H. Stewart. When barley and oats are mixed, the grain is unfit for the brewers' use, and is always used for feeding. Mixed grain crops produce a greater amount of food than either would if occupying the ground alone; hence the practice. Oats and barley mixed, make excellent horse feed.

Manuring of Growing Crops.—Dry slaked lime, ashes, plaster, leached ashes, etc., may be applied with excellent results to corn or potatoes when these crops are hoed,—best at the first hoeing. Superphosphate of lime, guano, fish manure, horn shavings, or any of the concentrated commercial fertilizers, are useful also. These manures should be hoed in at a little distance from the hills or rows, and thoroughly covered.

Leather Scraps for Manure.—C. S. Waldron, Nyack. Probably the cheapest method of reducing them is to mix them with caustic lime, in a heap, and give them the benefit of the heat of slaking. The lime will make them tender, and then the mass can be put in the compost heap, and undergo a second fermentation. They are a valuable manure, and will pay for carting and decomposing. They are considered equal to Anthracite coal for fuel; hence the price is about the same.

Wheat in England and America.

—An Englishman who is cultivating a farm in the western part of the State says: "Three years ago my brother wrote me that the average yield of the wheat crop in his county (Berkshire) was 55 bushels per acre. If we could only equal that here with wheat at \$3 per bushel, farming would pay. I apprehend we have just as good land in parts of this country, but that the great difference is in the climate. What say you?" We say first that it is not probable that any county ever averaged 55 bushels of wheat per acre. It takes splendid crops to average 30 bushels. The highest average yield of any county in this State, to the best of our recollection, was 23½ bushels per acre, and that was before the advent of the midge. There are few counties that average more than 13 bushels per acre. The English average is probably from 23 to 30 bushels. The highest yield in Mr. Dawes' experimental field during 20 years was 53 bushels, and this was obtained by high manuring, clean culture, and a remarkably favorable season. Sir Arthur, of Moore Co., Wis., obtained the prize from the State Society for a crop of wheat which yielded 53 bushels and 9 pounds per acre—the land accurately measured and the statement duly attested. And this was on land that had received no special attention. The previous crop was wheat seeded with clover. The clover was plowed under in June, and the land afterwards harrowed and cultivated. Our own opinion is, that as large crops of wheat can be raised here as in England. Our summer climate is more favorable, and on well-drained

land the wheat, covered as it usually is with snow, is not more liable to winter-kill. The only advantage of the English climate is, that the mild winters afford a longer period of growth. But even here the wheat on dry, rich land will grow under the snow, and we sow a month earlier than in England. We are not sure that wheat grows on as many days here as there. The usual trouble is that our wheat has not food enough. On rich, dry land, wheat will grow later in the fall and earlier in the spring than on poor land—and we think there can be little doubt that it grows more during the winter. Last summer a young American farmer "footed it" through this same county of Berkshire, and was surprised to see feeding troughs in the pastures, and still more to learn that although the young steers were "up to their knees in clover" they received a daily allowance of Indian corn and oil-cake brought from America. And yet beef, of the same quality, is higher here than there. Of course such high feeding makes rich manure. The land, too, is worked until it is as clean as a garden. And then in addition to feeding out all the straw, hay, and turnips, raised on the farm, and the purchase of extra grain and oil-cake, guano, superphosphate, and other artificial fertilizers, are used to a large extent. Is it any wonder that the crops are so large as to convey the impression that the wheat averaged 55 bushels per acre? The same treatment would give us just as large crops here, and from our superior climate with less labor. Whether it will pay or not is an open question.

Peat Pressed for Fuel.

—B. T., Plymouth, Mass. The peat speculation has had its day, and the gentlemen who bought peat bogs at \$100 per acre are anxious to sell. The rights in peat machines and companies are for sale, very cheap. Respectable looking factories with smoke stacks, on the borders of old heaver dams, can be bought cheap, and perhaps prove a good speculation, if they are altered into barns. The bogs are valuable for draining and turning into meadows, or as storehouses of manure. Losses have occurred in Hartford and Tolland Counties, Ct., to the extent of \$150,000, and a good many smart men, as well as peat bogs, in New England, have been sold. Coal is only one-half the price it was two years ago, and that alters the problem of profit in the peat speculation.

Pine Saw-dust.—W. L. Webber, Mich. The impression that pine saw-dust is injurious to vegetation has probably no foundation in fact. It contains less potash than the harder kinds of wood, and for that reason is not so valuable. It is quite as good an absorbent of liquid manure in the stable, and if put into the compost heap and allowed to ferment with the other manures of the yard and stable, we do not think the roots of plants would ever find out whether the absorbent was saved pine or hickory. We would not recommend the use of any kind of saw-dust saturated with urine, before it had been fermented. The resin probably will make the decomposition of pine saw-dust slower, and we should expect to see its influence upon the crops extending over several years. An experiment with a few loads of this bedding would determine its merits. Our correspondent will do a good service to the lumber regions if he will make experiments this season.

Suffolk Hogs.

—J. A. C., Palmyra, N. Y. What is the best pig for a mechanic to keep? The Suffolks are warmly recommended by their advocates for villagers, or those who wish to fatten just enough pork for family use. This, perhaps, accounts for the popularity of the Suffolks in New England, where a large part of the people who keep swine fatten them simply for their own use. The good points of the Suffolk are: small bone, compactness, rapid growth, and easy fattening. They readily consume the waste from the garden and from the kitchen, and, with a few bushels of meal in the fall, make the best of lard and pork. We have kept the Suffolk grades and like them as family pigs.

Blackwheat for Manure and Grain.

—A crop so easily raised as blackwheat, and so valuable, both for manure and for grain, ought to be more generally cultivated. The statistics show that it will grow in all parts of the country, yet about two-thirds of the whole yield is grown in Pennsylvania and New York. In 1860 the yield in the whole country was estimated at 17½ million bushels. It grows so rapidly, and produces so large a burden of stalks and foliage, that it is often turned in green, as a manure for other crops. Two crops can be turned in the same season, for this purpose; or it can follow a crop taken off in July, and be grown in time to turn in for rye. It is found to be an excellent preparation for this grain, and we once saw a field where these two crops were grown every year, for several consecutive years, each year showing an increased yield of rye. Blackwheat will grow on quite poor land, and yield 15 or 20 bushels to the acre, and it is this facility of yield-

ing good crops that has led to its use by poor cultivators, and damaged its reputation among the better class of farmers. If the object be to get a green crop to turn in, it is better to use 100 or 200 pounds of Peruvian guano, or its equivalent in some other manure rich in nitrogen, to the acre. This will give a heavy crop, which should be plowed under before the grain forms. If the crop is grown for grain, no manure will be needed upon good land, and light sandy or gravelly loams should have a dressing of ashes, superphosphate of lime, or bone-dust. From two to four pecks of seed are usually sown to the acre, the large quantity upon the poorer land. The best time for sowing is about two months before the early frosts, or in this latitude from the 15th to the 20th of July. The cool nights of autumn are found to be most favorable to the maturing of the seed. It should be cut soon after a portion of the seed turns brown. The rest, which is in milk, will fill out after the cutting, as the straw stands in bunches to cure. Commonly the straw is not bound at all, but is set up in small conical bunches, pressed slightly together at the top, until sufficiently dry for thrashing. As the grain shells very readily, it is always best to select a damp, cloudy day to cart it to the barn, or to the thrashing machine. The grain is valuable, making the fine flour from which buckwheat cakes are prepared, and is also much used in connection with oats and corn, as provender for hogs and horses. The *Agricultural Report* for 1865 gives an analysis which shows this grain to contain water 14.00; flesh formers 2.61; fat 53.1; accosies 23.3; mineral matters 1.61. Poultry are exceedingly fond of it, and it should always enter into the supplies of laying hens. Blackwheat is also one of the best cleansing crops in use. It grows so rapidly and so thick that it smothered all weeds, and leaves the surface soil light and mellow. Corn rarely does well after blackwheat, when sown for grain. It is a good preparation for the root crops. The straw is of some value when fed to sheep, though most farmers allow it to rot in the field, or use it to litter the yards.

Marking Poultry.

—H. E. B. There are several ways of marking poultry. Ducks and geese are easily marked by cutting holes in the webs of their feet with a shoemaker's punch—thus: * * * * *. * * * * show six different and distinct marks. It does not hurt them much, and does them no permanent injury. It is a more difficult thing to mark chickens and turkeys, especially young ones. They have all four toes on each foot, and in most breeds the nails on the three front toes are perfectly distinct when the birds come from the egg. These may be clipped short on one or more toes, of either foot, and so quite a number of marks made. This marking has to be renewed, but as we have no experience in its use, we cannot tell how long it will remain distinct. Adult fowls may be marked by rings of wire on either leg, and with notches filed upon them, but this method of marking is not applicable to growing chicks.

Whitewash.

—W. D., Laurel Lake. The whiteness of the wash depends upon the quality of the lime used. Much of the lime burned for making mortar contains impurities, and is too dark colored. The lime should be fresh burned. Take the large lumps only, and slake a pound or two at a time with boiling water until it is about the thickness of cream. Then add cold rain water until it will flow well from the brush. One or two table-spoonfuls of clean salt, and a quarter of a pound of clean sugar will make it more adhesive. Some add ½ lb. by measure, of milk to the water, for outside work. The wash can be colored for fences and outside work by adding any convenient coloring matter. A small quantity of Venetian-red will make a light peach-blow color. A few ounces of yellow ochre will make a light straw color. The wash will make the wood more durable.

The Black Cayuga Duck.

—G. A. P., Greenwich. We have had no experience with these birds, but know that they are prized by poultry men. It is supposed that they are a cross of the wild black duck with the common Mallard. Their color is black, with a few white feathers on the breast, and a faint green tinge on the head, neck, and wings. They are hardy, and of good size, weighing from 12 to 15 lbs. per pair. They have short legs, are poor walkers, and need guarding at night.

Keeping Sausage Meat.

—I. A. S. writes: "After preparing the sausage meat in the usual way, put it into jars; when the weather becomes warm, and there is danger of spoiling, put it into muslin bags, and then put these bags into strong brine, such as is used for pickling beef. When wanted for use, put one of these sacks into a vessel of water, and let it remain overnight; in the morning hang it up and let it drain perfectly dry, and it is ready for use. The sack can be split open, and you have a roll of nice, fresh sausage, which you can cut in slices, make into cakes, roll in flour, and fry."

Cucumbers as a Farm Crop.

Cucumbers are extensively raised in the vicinity of our large cities, especially New York, for making pickles. It is a very good crop for farmers, as it can be raised after the other crops are all planted. The usual time of putting in the seed is from the 25th of June to the 5th of July. An old corn stubble, in good heart, is suitable ground for the pickle patch, though swart is sometimes selected. Plow and barrow thoroughly, and mark out rows running both ways 4½ feet apart. Put in the hill a large shovelful of well-rotted compost, and cover it with an inch or two of soil. Plant from five to ten seeds in a hill, and thin out to four after the plants are six inches high. If the weather is dry, the manure should be thoroughly drenched in the cart before it is dropped in the hill. It is usual to cultivate the crop but once, just before the vines fall over. Much labor is saved by doing this just at the right time. With a steel tooth cultivator, the ground can be stirred three inches deep, and very little space be left for the hoe. Some sow turnip seed at the time of cultivating, say about the 1st of August, and get half a crop of turnips, which have the ground after the cucumbers have done bearing. Cucumbers can be picked in six weeks from planting, and the season will last from four to six weeks, or until the first frost, and then there is about six weeks for the turnips before the ground freezes. This is working the soil pretty hard, but with high manuring, it pays much better than to have the land idle. The turnips do not exhaust the land more than the weeds that would be certain to grow on land cultivated but once. Cucumbers are not an exhausting crop. With good culture, and a good season, 300,000 pickles are raised upon an acre, and the farmer expects to clear about 300 dollars. Some make a good deal more, but green hands can hardly expect as much. The crop is usually bargained for at the factories, at the beginning of the season, and it is carried to the depot or landing every day. One-half the vines are picked on alternate days, thus keeping the force constantly employed. It takes about four men or boys for an acre during the picking season. The cucumbers are usually assorted into three sizes, the largest for table use, and the two smaller ones for the factory.

Irrigation of Grass Lands.

BY F. W. FUERSTENHAUPT.

[We recall well the surprise and wonder with which we first took in the great power of water as an agricultural implement, so to speak. In the hands of those who know how to use it, the crops of grass are doubled, tripled, quadrupled—with no proportionate outlay of labor or manure. The art of irrigation is indeed simple to those who know how, but it is just sufficiently critical to lead those whose knowledge is not of a practical kind, if they are wise, to have little to say about it. We have the pleasure of introducing to our readers the author of the following as theoretically and practically a master of this subject.—Ed.]

"Agriculture cannot prosper without cattle, and they require wholesome, agreeable, and nourishing fodder—hence its supply must receive particular attention. We may place the grasses first among fodder plants, for they have become indispensable to our domestic animals, and contain the greatest amount of nutritious matter. By proper cultivation, the farmer, in soils not adapted for grain, can achieve almost incredible results with grass. The variety is very great, and

each locality, from the swamp to the dry hillock, from clayey soil to quicksand, brings forth a different species of this wide-spread family. All grasses, however, are not of the same value to the farmer, since they vary considerably in their nature. Some are hard, dry, rough, brittle, not very nourishing, and only partaken of by animals in extreme hunger; others, again, have opposite qualities, and give, both when green and dry, an excellent fodder for horses, cattle, and sheep. The best meadow grass is such as agrees most with the character of the land on which it grows, and with the least volume contains the largest quantity of nutritious matter. The more air, light, warmth, and moderate moisture, can act on vegetation, the more profuse will be the harvest and the finer and better its quality. If meadow land should receive a supply of moisture, by atmospheric vapors, rain, dew, etc., at suitable times and in sufficient quantities, then it would, unaided, be capable of promoting vegetable growth; but it seldom gets this fertilizing element at the time when needed, or in the requisite quantity. Therefore it must be to the interest of agriculture to supply the lack of water by means of artificial arrangements. And nothing can increase the returns more, or better insure the necessary fodder, than a thorough system of irrigation constructed on sound principles. By this the great agricultural problem of attaining the greatest amount of provender with the least cost and on the smallest amount of surface, is fully solved, while the keeping of live-stock and the making of manure is brought into better relations to the culture of grain. A properly irrigated field pays an annual interest to the farmer, and is a constant source of cheap material for fodder and manure for the future. By conducting the water in a fitting manner, we distribute the elements most necessary to vegetable life. The proprietor of land so supplied is never perplexed with anxiety by arid seasons, spring frosts, etc., for these he can avert by the aid of fresh water. He reaps his crops without having to manure, till, or sow. Moles, ants, and other noxious animals and insects, are also destroyed, and thus the whole harvest is insured.

Recognizing thus the importance of irrigation, we need to know, 1st, which kind of water is most useful; 2nd, where and how a system of irrigation is best constructed and applied; and 3rd, what necessary costs are thereby incurred. Each of these points we will briefly explain.

First, every sort of water can be employed for purposes of irrigation. From its great tendency, however, to dissolve many substances, the decomposition of which it promotes, and with which it partly combines, it can never be found perfectly pure in nature, but always commingled with such soluble substances as it has come in contact with. Its action on vegetation is as different as the foreign ingredients it contains, of which very many are detrimental to plants. Natural waters which can be used to boil peas (that is, not very hard); such as contain fish; such as when rapidly evaporated give a blackish precipitate; those which come from chalk, limestone and saline formations; and all brook and river waters, are to be recommended for irrigation. On the other hand, water which has a red color, and looks as if covered with oil, or which gives a brown precipitate, is not fit for this use, because it contains too much iron and tannin. That coming from peat bogs and moor ground, from mines, and deposits of ochre, is also not suitable. If no good water can be had, then the impure may be prepared and improved artificially. Now, all water impregnated with impurities is

meliorated by long exposure to the rays of the sun and the effects of the atmosphere, and by being allowed to stand and deposit these injurious substances. This is easily accomplished if the water be first collected in ponds, from which it can be drawn off as required. Again, by placing animal manure in a large tank and letting the water flow over it, we greatly increase its fertilizing power.

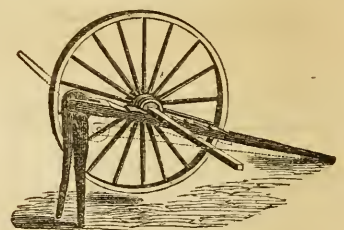
Second, in accordance with the variations of soil, position, climate, and the disposable quantities of water, a similar variety exists among the systems of irrigation, which have gradually sprung up, though the object of all is the same. These systems are divided into two classes, viz.: the irrigation of slopes over which water may trickle, and irrigation by flooding, or overflowing with standing water.

The former may again be subdivided, according to the peculiar nature of the land, into 1st, Irrigation of Natural Slopes; 2nd, of Regulated Slopes; 3rd, Dorsal Irrigation, or where the water flows both ways from a ditch on an artificial ridge. Irrigation by *Standing Water* is subdivided into *natural* and *artificial*.

Which of these various systems is to be adopted, depends altogether on the locality and character of the meadow land; and it is best to consult an experienced person on this point.

Third, nothing should be done before a proper and minute plan has been made, and the kind of workmanship and manner of obtaining material has been determined upon. If these be not attended to beforehand, disorder and errors will be the sure consequence.

A good and regularly constructed system of irrigation may cost, according to circumstances, from \$10 to \$75 per acre, but it secures a double and triple crop, for '*water makes grass.*'"



A Wagon Jack.

There are a score of ways to lift wagon wheels one at a time, to wash them. Most wagon jacks have some pins about them liable to be lost, or to slip out. So one without any, and very simple in its character, and easily made, is so far meritorious, if not novel. "J. B. L." of Barlow, Ohio, sends a neatly whittled model, which we show in the engraving. It consists of three pieces. The long lever is 8 feet long; the upright lever, 2 feet and 10 inches long. Both of these have a slot mortise in one end into which the short lever or handle, which is three feet long, fits. This handle may be made of an inch board, broad and oval-shaped at one end, which needs an iron band around it and extending a short way up the handle, to prevent splitting. Two-inch holes, 4½ inches from center to center, must be bored through this oval part in such a way that the lower one will fall about twice its width back of the other, when the handle is held perpendicular. Corresponding holes are made through the sides of the slot mortices, and hard-wood pegs inserted to fit rather loose. The working is very simple.

The American Badger.

The badgers are a peculiar and interesting genus belonging to the weasel family, but very unlike most of their congeners. The American badger is found west of the Mississippi; its Latin or scientific name is *Taxidea Americana*.

Its length is about two feet, but its long hair makes it look more, and nearly conceals its tail, which is actually about six inches long. The badger is very broad, and the long gray hair upon its back hangs off from it like a cloak or blanket, while the hair of the legs and belly is short and of a dark brown color. This gives the animal a very peculiar appearance, which is well represented in our engraving. The head is small, pointedly conical or wedge-shaped, and striped with light and dark bands, in a way to increase this wedge-shaped appearance. Badgers burrow with great ease, and make their homes beneath the surface of the earth. Their food is both vegetable and animal—they being fond of sweet fruits, nuts, honey, insects, and small animals—and their habits are much like those of the European badger, which they greatly resemble. The skin

is your chemical decision and theory in this matter? I am satisfied the practice is profitable with me." If the hen manure is dry and has always been kept dry, so that it has not undergone fermentation, there will be little or no loss from mixing ashes with it. If the hen manure is decomposed, so that it contains ammoniacal salts,



THE AMERICAN BADGER, (*Taxidea Americana*.)

the ashes, especially if the mixture is moist, would set free the ammonia, and cause a loss.

Pachydermous Animals.—The Peccary.

Naturalists classify under the order *Pachydermata*, or thick-skinned animals, the elephant, rhinoceros, hippopotamus, all of the swine

like horses. The nearest approach to a native hog in this country is the Texan peccary, the animal represented in the accompanying engraving. Two species of peccary and the South American tapir are the only native representatives of the great family of the pachyderms.

The Texas Peccary, Collared Peccary, or Mexican Hog, as it is sometimes called, (*Diocyles torquatus*), is quite an attractive little animal, of thoroughly piggish aspect and manners. It is rather symmetrical in form, slender-legged, the hind feet three-toed, thick-necked, with a snout adapted to rooting. It is about three feet long, and weighs fifty to sixty pounds. The color is dark brownish gray, the bristle-like hairs being nearly black, with white tips. An oblique band of light color passes from the throat upward and backward across

the shoulders. Peccaries feed upon fruits, nuts, roots, insects, and small animals, and occasionally a herd will do considerable damage in destroying crops. They are said to be without fear, and so vigorously do they resist an attack, that they may really be reckoned dangerous foes. Their tusks are concealed, but are nearly straight, sharply two-edged, and very strong, so that they will both cut like a lancet and tear powerfully. In disposition they are irritable. The flesh is sometimes eaten, but it is only fit for food at certain seasons, and then that of the males is never used. The peccary has two glands in the small of the back, or loins, which secrete an oil with a disagreeable odor, which taints the flesh, and these must be immediately removed if one is killed for food. We know not what attempts may have been made to domesticate this animal, but have little



THE TEXAS PECCARY, (*Diocyles torquatus*.)

family, and the horse and his kindred—the ass, zebra, etc. Some of these have not particularly thick skins, but the teeth or other characteristics show their affiliations with those which have. For instance, though to external appearance, the hog and horse are totally unlike, yet the teeth and their arrangement in their jaws are in many respects quite similar. Hogs, besides, have been known which had solid hoofs

doubt it might be done, and in all probability after a few generations the bad flavor of the flesh would be improved and an aptitude to take on fat developed; so that, if from any cause the flesh of the swine should lose in popular favor, we may possibly look for a substitute in that of this Texan cousin, and however distant that day may be, we ought always consider the uses to which our native animals may come.

ASHES, PLASTER, AND HEN MANURE FOR CORN.—"J. W.," of Clyde, N. Y., says he "uses this mixture on his corn, and finds it a very good scare-crow. Some one has written against this mixture as one part neutralizing another. What

Kerry Cattle—"The Poor Man's Cow."

(Concluded from page 241.)

best types of the breed. The importation consisted of the bull "Paddy," the cow "Margaret," (both shown in the engraving), another cow "Honora," and a bull calf dropped on the passage. The animals were photographed by Fontayne, and the pictures copied upon wood. We believe that they present the characteristics of the breed as well as any can. The only other importations of Kerrys that we are aware of are those made by Mr. Sanford Howard in the years 1859 and 1860 for Mr. A. W. Austin, of West Roxbury. The descendants of these, now in possession of Mr. D. F. Appleton, Ipswich, Mass., some 12 or 15 head, have increased notably in size, and improved in form, but retain all their good milking qualities, ability to sustain themselves on coarse and scanty fare, and to hold out very long in giving milk. There are a few other cows in this country, owned by different parties, but all, so far as we can learn, traceable to one of the three importations named; and wherever tested, we believe the Kerry cow fully sustains her character as an extraordinary milker, considering her size and the quantity of food she requires, and demonstrates her right to the title, "the poor man's cow." A standard treatise on cattle says of the Kerrys:

"They are found on the mountains and rude parts of the country, in almost every district. They are small, light, active, and wild. The head is small, although there are exceptions to this in various parts, and so numerous, indeed, are those exceptions, that some describe the native Irish cattle as having thick heads and necks; the horns are short compared with the other breed, all of them fine, some of them rather upright, and frequently, after projecting forward, then turning backward. Although somewhat deficient in the hind quarters, they are high-boned, and wide over the hips, yet the bone generally is not heavy. The hair is coarse and long; in some places they are black, in others brindled; and in others black or brindled, with white faces. Some are fine in the bone, and finer in the neck, with a good eye, and sharp muzzle, and great activity. They are exceedingly hardy; they live through the winter, and sometimes fatten on their native mountains and moors; and when removed to a better climate and soil, they fatten with all the rapidity of the aboriginal cattle of the Highlands and Wales. They are generally very good milkers, and many of them are excellent in this respect."

Yonatt says: "The Kerry is truly a poor man's cow, living everywhere, hardy, yielding, for her size, abundance of milk of a good quality, and fattening rapidly when required." Milburn observes: "She is a treasure to the cottage farmer; so hardy that she will live where other cattle starve. She is a perfect machine for converting the coarsest cattle food into rich and nutritious milk and butter." Prof. Low remarks: "The peculiar value of the Kerry breed is the adaptation of the females to the purposes of the dairy. In milking properties, the Kerry cow, taking size into account, is equal or superior to any in the British Islands. It is the large quantity of milk yielded by an animal so small which renders the Kerry cow so generally valued by the cottagers and smaller tenants of Ireland. She is frequently termed 'the poor man's cow,' and she merits this appellation by her capacity of subsisting on such fare as he can supply."

We can hardly give these statements from distinguished British writers upon cattle without expressing our own belief that the quantity

and quality of the food have just as much to do with the milk a Kerry will yield as with a cow of any good milch breed—however true it may be that she will make more and better milk than another cow on a very inferior quality of fodder, and on hard, rough, short pasturage.

Walks and Talks on the Farm—No. 55.

When James Caird visited this country he met at Niagara Falls a brother Scotchman who had resided here for thirty years. Said he: "Oh, man, they're meeserable farmers. It would break your heart to see how they just scart the groon. It's no very guid, ony way, but they dinna gie't a chance." I am half inclined to think the old Scotchman right. We do not give the ground a chance. I am sure I do not. My wheat is full of red-root, and there are thistles enough in the barley and in the clover to "break the heart" of any one accustomed to the clean culture of the Lothians. I do not want better land or a better climate than we have here. All that is needed is to give the ground a chance. I was once on William Bennett's celebrated farm in Bedfordshire, and remarked that the land looked as though it was not naturally rich. "Yes," said he, "it's poor land, but it's very grateful." And so it is with our land. Drain and cultivate it thoroughly, and give it a little good manure, and it will overwhelm you with gratitude. I question if there is any land in the world that gives such large and immediate returns for the labor expended upon it. This is due, probably, to our cold winters and hot summers. Only give the ground a chance.

"If I was a young man," writes an old friend, "I would go south and buy a farm." If I was young, I would stay just where I am. There is certainly work enough to be done here, and that is the place for a man who is able and willing to do it. Judged by a high standard, we may be "meeserable farmers," but the next twenty years will enable us to make a better show. The nurserymen and market gardeners, with here and there an enterprising farmer, are showing us what land will do if it has a chance. There is a slow but unmistakable improvement going on every year. Corn is cultivated oftener and more thoroughly—and that is one of the best criterions of good farming. The Deacon concluded to sell his farm, and was offered \$140 per acre, but wanted \$150. He says now he will stay where he is, and will "see if he cannot find another farm under the present one." He has bought a new Michigan double plow, and came the other morning to borrow a three-horse evener. Mine were all in the field, and I told him he would find a rip-saw in the tool-house, and some two-inch elm plank under the shed, and that he could make one in less time than he could go to the field and back. Many people think they must have hickory, but elm answers the purpose well enough. The Deacon made a capital one, saving it wider where the strain comes. An elm evener in this shape is a good



THE DEACON'S EVENER.

deal stronger than a hickory one of the same weight sawed straight. The Deacon, too, is going to underdrain this fall, and I presume intends to make more from his fifty acres than I do from a hundred. He is delighted with his Michigan double plow, and put it in a couple of inches deeper than the land has ever been plowed before. He does not propose to "scart

the groon." And I believe this is simply an indication of the improvement that is quietly taking place all over the country. We shall not be "meeserable farmers" much longer. High prices have given agricultural improvement an impetus that cannot be stopped even should they not continue.

Deep plowing, however, is not all that is necessary to produce good crops. Some farmers who plow deep "scart the groon" afterwards. This is one reason for the great difference of opinion in regard to deep plowing. One farmer tries it and finds great benefit; another tries it, and reports that it does more harm than good. Now if the former cultivated his land thoroughly and deeply afterwards, and the other merely scratched on the surface without breaking the lumps, it is easy to account for the difference.

My old friend Dr. Adam does not agree with some of the remarks made in our free and easy Talks. He thinks I underrate the value of nitrogen in food, because I contend that the amount of nitrogen in different foods is not the measure of their nutritive value. It is no use wasting words on such a point. Peas contain as much again nitrogen as Indian corn, and if he knows of a way of feeding them so as to produce double the amount of milk or beef, I would like to know it. He thinks, too, that the value of manure depends on the kind of animal it is obtained from, and not merely on the food. I do not recollect exactly what I said, but I was trying to show that it was a pity agricultural writers should waste so much time in discussing the value of manure from the different classes of farm stock, while they say little or nothing in regard to the food from which the manure is derived. I contended that it makes no sort of practical difference, so far as the value of the manure is concerned, which kind of stock a given amount of food is fed to. The Doctor thinks it does, and wastes his time in trying to prove that if the animal takes out a certain quantity of nitrogen, phosphates, and potash, in the form of wool, bone, flesh, or cheese, there will not be as large a quantity of these elements left in the manure as if none had been abstracted. Of course I never denied such a self-evident proposition. A cow that eats thirty pounds of clover hay and ten pounds of middlings a day, would consume during the year:

	Containing Nitrogen.	Phosphates.	Polash.
Hay, 10,550 lbs.,....	273	136½	142
Middlings, 950 lbs.,....	94	30½	51
Total in food,.....	367	167	193
In 600 lbs cheese.....	27	20	8
In manure,.....	340	187	215

Now will the Doctor figure out how much one would lose from feeding the same amount of food to sheep that shear, say six pounds of wool a year, and how much from a growing steer, and how much from a fattening animal, and how much from a pig, and how much from a horse? It would take me half a day to do it, and I do not propose to allow this class of speculative writers to rob me of time that can be much better spent in cultivating corn. Mr. Lawes has been investigating this subject for twenty years, and will shortly publish the results of his experiments. He writes me in reply to some inquiries: "The value of the manure depends entirely upon the food. The quantity of nitrogen stored up in the animal is very small, and it is probable, from recent experiments at Rothamstead and in Germany, that but little nitrogen is evolved by respiration or by the

functions of the body." If the yard be exposed to get the wash of the eaves, it will make vastly more difference in the composition of the manure than the animals possibly can.

My cows appeared in capital order up to the time of calving, but fell off rapidly in flesh afterwards. I have never had them go out to grass in such poor condition, and never had such poor milk. The reason, I think, is this. Butcher brought a high price, and we tried to make as much as possible. I had an abundance of capital corn-fodder, with considerable small ears of corn on it. The cows had all they would eat, and not only gave rich milk, but kept in high condition. Some of them, in fact, were fat enough for beef. It was difficult to dry off some of the best milkers, and we milked them until within a month or six weeks of calving. About the first of April we had fed out all the corn-fodder, and after that they had clover hay, all they would eat, but no grain. It was just the time when they needed good feeding, and I presume they missed the corn. The corn-fodder stimulated the secretion of milk, and when we dried them off the calves required it. In fact, though we stopped milking them, they doubtless secreted as much milk as before, and the clover hay did not afford as much nutriment as the corn-fodder. Hence the cows got thin. It was bad management. I am now slopping them with two quarts of corn meal a day, in hopes of correcting the mistake.

It is evident to any thoughtful man that we have entered a new epoch in American agriculture. Our population increases rapidly, and the production of food does not keep pace with it. "I have just sold a two-year-old heifer for \$60," said an old farmer. "I had no idea of selling her. She had run in the yard all winter, and I never fed her a handful of grain, but a butcher saw her and offered me \$60 for her." He thought it a great price. I told him that a well-bred animal, with liberal feeding could easily be made worth \$100 at two years old. It seems difficult for an old farmer to realize the changed condition of things. He is apt to think that a thing which did not pay when the country was new will not pay now. "Fifteen dollars for a calf!" exclaimed a city friend the other day. "I thought calves were not worth more than a dollar apiece. My father used to sell them for that." Some years ago I read a paper on the "Four Course System of British Agriculture," before the Provincial Agricultural Society of Canada West. Robert Russell was here at the time and attended the meeting. There was a ball given by the Mayor the same evening, and nearly all the prominent members of the society attended it. Russell was disgusted. They did things very differently in Scotland. He thought agriculture was not appreciated. How could it be, with calves a dollar apiece and wheat seventy-five cents a bushel? We have now high prices—perhaps a little too high—but they were necessary to place agriculture on its true foundation. Farming will now be as respectable in fact as it has hitherto been in theory. Let young farmers take a calm view of the situation. We are going to have a very different system of farming from what we have had. Mark you, I am not finding fault with the old farmers. No man can respect them more than I do. They have done an immense amount of work and done it well. Their system was the best in the circumstances. But the "stump period" has passed, and is followed by the mowing machine, with the steam plow appearing in the distance. Virgin fences and bad roads are still found, but they, too, will soon

belong to the past. Underdraining will improve the latter, and the high price of wood will banish the former. Labor is more abundant, and wages are paid in wheat less than formerly. The American-born or American-trained German makes a splendid farm man, and takes more readily to new plans than the English or the Irish. The district school has a prodigious influence. Now let our young farmers bestir themselves. They must be "men of thought and men of action." In the older settled sections we have blacksmiths, and wheelwrights, and carpenters, and brick-layers, and saddlers, at no great distance, and it is no longer necessary for a farmer to be a "Jack of all Trades." His business is to cultivate the land; to look well to the state of his flocks and his herds; to attend to the thousand little details of his establishment. He must have a trained mind and skilful hands—must be able to work himself and direct others. He must plan work for all kinds of weather, and not do in summer what should be done in winter—should not work in the barn when the sun shines and make hay when it rains. He requires great energy, promptness, and perseverance. Much of his success will depend on getting his land in good order and sowing in proper season, and it requires no little forethought and good judgment to accomplish even this. It is a good deal easier to "work" than it is to think. The best general rule for a young farmer's guidance is to do first what he likes to do least.

Yes, I saw the article and know the writer. He has no acquaintance with practical agriculture, and of course thinks it an easy matter to raise large crops and "make farming pay." He does not know what he is talking about. A knowledge of "book-keeping" would be of great use to a farmer, but it does not follow that a man who understands book-keeping would make a good farmer. An acquaintance with chemistry and other sciences would be of great benefit to a practical farmer, but it does not follow that the chemist can "make farming pay."

This subject ought to be understood. Many people seem to think that it is the easiest thing in the world to manage a farm; while in point of fact it requires far more brains to be a first-rate farmer than to be a second-rate lawyer. The man who thinks that *because* he has studied agricultural chemistry he will make a good farmer is a goose. If he has the necessary qualities for success as a farmer, and likes the business, he will probably succeed. If he has not, all the chemistry in the world will not enable him to "make farming pay." Chemistry will not teach him how to buy and how to sell. It will not get him out of bed in a morning. It will teach him how milk is formed, and why it turns sour, but it will not secure regular feeding and steady milking. It will teach him the importance of having *boiling* water to scald the milk-pans, but it will not enable him to have everything ready just when it is wanted. If he would make a good farmer without chemistry, a scientific education will enable him to make a still better and more successful farmer; but if he would not succeed in some degree without it, chemistry will not enable him to make farming pay.

If the tedding machines' would work well in a heavy clover crop, and would not knock off the leaves, they would be of great use. Mine works well in meadow hay, but clogs in clover. Mr. Gould says it is because I have one of the old machines, and that now they are made stronger, and work well in clover. If tedded

immediately after the mower, I do not think it would shake off the leaves, and would unquestionably facilitate the curing. John Johnston writes me that if tedded, clover cut in the morning in hot weather can be cocked in the afternoon, say by four o'clock, and by turning the cocks over can be got in the next day. I imagine the real point in hay-making is to cure as rapidly as possible for the first four or five hours after it is cut. It is while the hay is full of sap that injurious fermentation is most likely to occur. If the tedder will work it would pay to go over it every hour as long as there was no danger of breaking off the leaves. We have a splendid climate for making hay, and with a mowing machine and a good tedder we ought to be able to save all, or nearly all, the nutriment there is in the grass. There can be little doubt, however, that we frequently lose nearly half of it.

The Village Cow-Soiling.

There are multitudes of villagers owning from one to three acres of land, that have given up the keeping of a cow, mainly on account of the difficulty of finding pasture for her during the summer. They want in their families, on an average, four quarts of milk daily, and at least a pound of butter, worth at present prices not far from \$4.00 a week, or \$200 a year. A good cow might not supply all of this regularly the year round, but she would supply half of it for six months in the year, and the want of the cow will pretty surely compel a man to pay nearly this sum for these two items of household luxury. The remedy for the loss of the summer pasture is soiling. Make one acre of the land that lies idle, or is but half improved, rich enough, and it will support an average-sized cow through the year. It is estimated by those who have tried the experiment that a half acre, cultivated with a good succession of crops, will supply all the green fodder a cow can eat, with a large surplus of dry fodder for the winter; while the other half acre will furnish roots enough for succulent food through the winter. If there is no manure upon the premises, this indispensable article would have to be purchased for the first year; after that, the heap made from soiling, and the utilization of all the wastes of the family, might be relied upon to keep up the fertility of the land and to increase it year by year. The soiling crops found to be profitable, are winter rye, Italian rye grass, cabbage, oats, millet, sorghum, and Indian corn and clover. There are others, perhaps, equally good, or better for a more southern clime, but with these a man may have a good succession from early spring until frost. The rye is the first to start, then cabbage sprouts, clover, oats, and Indian corn, in due order. The corn will need to be planted in successive strips in drills, every two weeks from the middle of May until the first of August, and the later sowings may have straped turnips sown between the drills, after the corn is well started. Use these successive green crops as soon as they yield good cuttings, and what is not wanted cure for winter use. The other half acre should be kept in roots and cabbages—say $\frac{1}{4}$ in late cabbages, $\frac{1}{4}$ in sugar beets, and $\frac{1}{4}$ in mangels. The yield of roots ought to be 300 bushels of mangels, and 100 or more of sugar beets. This will give the cow quite as many roots as she can profitably eat for six months of the year. Probably a part of them could be economically exchanged for oil-cake or cotton-seed meal. This, of course, would involve a considerable labor, but many of these

villagers keep one bired man during the summer as man of all work, or a gardener whose time is not fully occupied, or have boys for whom such occupation would be a great blessing, as it would keep them out of mischief, give them an agricultural education, and help them to a reliable means of self support. The best kind of cow for villagers is a matter of fancy somewhat. If butter and cream are leading objects, an Alderney, either pure blood or grade, according to the means of the purchaser, would be best. If quantity of milk is the main thing desired, a Short-horn or Ayrshire grade would be better. A good grade or native cow can ordinarily be picked up, and a very superior one by offering \$10 or \$15 above the market price. But by all means, the cow for family use, whatever her breed, should have a good reputation for both milk and butter. If you mean to be at extra expense for soiling, have an extra animal to feed—one whose market value is a hundred dollars and upwards. For quarters, the cow may be confined all of the time in a well-ventilated and lighted stable. If she can have the sun occasionally, she will not suffer much for the want of exercise. Use the currycomb and brush freely, every day if possible. Keep the stable well furnished with litter, and the cow clean and comfortable. We are persuaded the difficulties of soiling are greatly overestimated by the people who have not tried it, especially the raising of roots. Once get a clear view of what is wanted, adopt your plan, and the difficulties will vanish. Many in our villages and in the suburbs of large towns can get their milk and butter cheaper and better by this method than by any other. One great advantage of soiling is the great quantity of manure it furnishes for the land, and in this its success wholly lies.



Fig. 1.—VIEW OF FENCE ACROSS A STREAM.

Swinging Fences Across Streams.

We have heretofore been indebted to several of the *Agriculturist's* subscribers for plans for carrying fences across fordable streams, subject to great rise and fall. Cattle and hogs will not dive, and they will seldom voluntarily swim; so though cattle will sometimes swim to cross from one side of a stream to the other, they will not willingly venture to cross the line of a fence at high water, even though the fence be washed away. Such streams often bring down great masses of flood-wood and trees washed from the banks, but this usually occurs only at the very highest floods. The problem of fencing across fordable streams resolves itself to this, namely: To prevent hogs and cattle getting out at low water, and to contrive such a structure as shall allow logs and riffraff to pass without the fence itself suffering harm, or being carried away.

A "Lancaster County (Pa.) Farmer" sends us the following description of his way of doing the thing; and from his description and a few pen marks our artist has made a very pretty pic-

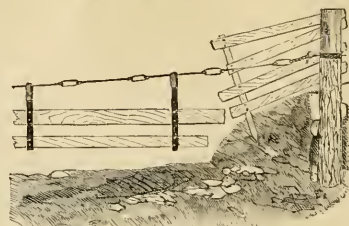


Fig. 2.—DIAGRAM OF SWINGING FENCE.

ture, of which "L. C. F." cannot have the credit. "I have had my plan in use for twelve years over a stream of water from fifty to sixty feet wide, which at times rises from eight to twelve feet high, and it withstood all the floods unharmed with the exception of breaking; the hook at one end, which was easily repaired; and it has not cost me a dollar since I put it up. I sunk heavy posts on each bank, from four to five feet in the ground, and fastened well with stones. I put a ring over each post three inches wide, and had a hole punched in the ring on opposite sides for the bolt or hook to pass through. The shank of the hook is at least six inches longer than the post is thick, with a screw cut the whole six inches, and furnished with a nut to stretch the chain to its proper place. When I first put the chain across, I planted willow trees, which are now large enough to use should the posts give out. I bought five-eighths double-refined round iron rods, and had them cut three feet long, and had an eye turned and welded on each end; then had a link made of the same iron, about eight inches long, welded into the eyes of two rods, and so on; then had three or four links at each end of the chain for the purpose of taking it up if it sagged too much. The hooks were made of the best three-quarter-inch iron. Then I straightened out old carriage tire, turned a hook on one end, and punched four holes in each. I fastened these tires to boards with small bolts, as shown. The hooked

ends of the irons went over the chain, and when on I closed the hooks to prevent them from coming off. The boards should be eight or ten inches wide; two boards deep is sufficient, and the lower one ought to be in the water, to prevent hogs getting under when the stream is low.

I would, in all cases, swing the chain as low down to the water as possible, having it high enough to prevent cattle from getting over it. When the water rises, it will soon be over the chain, and all drift-wood will pass over harmless. The higher your chain is, the more danger there will be of rubbish lodging and breaking it. I contend that there is much more strength in a chain of this description than in a rod, for when a log strikes it the whole chain gives, and resists the pressure with much more elasticity.

THE HARROW-TOOTHED CULTIVATOR.—"One who has tried it," writes: "I wish to record

my experience in the use of the cultivator with harrow teeth, described in Henderson's *Gardening for Profit*, and also in the *Agriculturist* for Feb. 1867. You advise its use as a garden implement. Do you know that it cannot be beaten for giving corn its first cultivation? I would advise every farmer to procure one; when corn makes its appearance you can run through almost before you can see the rows, and a great deal closer to the hills than with a cultivator with shovel teeth. It does not throw up lumps and cover the corn; on the contrary, it leaves the soil fine, level, and in good condition. Plant the garden vegetables in rows, far enough apart to get between them with the horse, and as soon as the rows become visible, in with the cultivator, and if this process is repeated every week, it will save a great deal of hand-hoeing, and weeds will disappear. But don't let the weeds get the start, or you will have to resort to the hoe."

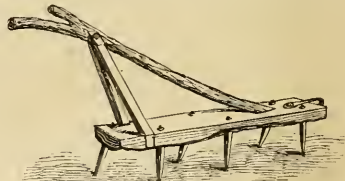


Pure Water for Chickens.

The season has been a very wet one, just the weather to give the gapes. Last year, with great care in feeding, we lost a number. So far, this year, with great care to have pure water, we have not seen a chicken gape. We know care enough was not taken to have the water always pure. "Mother Wit" takes the place of a long purse to those who possess it, and our friend Mabbett, who is ready in expedients, suggested to us the use of a fruit-can filled with water, covered with a flower-pot saucer, and then quickly inverted, as a better drinking fountain than the earthen ones, or indeed, than any others, and we so find it. Everybody has old fruit-cans, or everybody ought to have, for there are no cheap luxuries equal to these canned fruits and vegetables. Put a nail under the can.

Scarifier for Root Crops, etc.

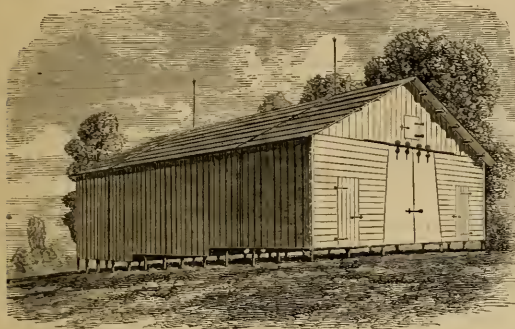
We were obliged to tax our inventive faculties a few weeks since to get an implement which would mingle some concentrated manures in the drill before planting potatoes and corn, lest the strength of the fertilizer untempered with soil might hurt the seed. It proves so use-



SCARIFIER.

ful for this and for other purposes that we had an engraving made, and commend it to the readers of the *Agriculturist* for the purpose for which it was made, as well as for working between all crops raised in drills 16 inches to 2 feet apart. It will work well late in the season be-

tween rows where the common cultivators and horse-hoes are better employed before the plants begin to cover much breadth of soil. A piece of oak slab, ten inches wide and about three inches thick, was taken, and six barrow teeth were set in it, all having a rake to the rear. After the first two, the others had an outward slant, so that the rear teeth spread at the points fully one foot, the front ones being about six inches apart. A handle was improvised, bolted to the slab in front and braced behind, and a plain clevis completed the affair, which has, at a moderate estimate, paid for itself twice over already.



Another Kansas Corn House.

Mr. Crawford Moore, of Leavenworth Co., Kansas, thinks we do injustice to his corn house by the intimation that the one built by "Ottawa Jones," figured on page 57, (February), might be the best in the State of Kansas. Our readers may see both plans, and judge between them. It will be seen by reference to the engraving that the house stands upon sloping ground, and thus while the roof and floors are level, the floor of each section of 20 feet drops down a step. The entire building is 60 feet in length by 30 in width, and is constructed as follows: It has an alley or cart-way running lengthwise through the center, which is 10 feet wide at the sills, and 8 feet wide at the top. On each side of the alley is a crib 10 feet wide at the bottom, and 11 feet at the top. The outer and inner sides of the cribs are slatted perpendicularly; the gable ends are close-boarded. Each crib-gable has a door, and sliding doors upon rollers close the cart-way at each end. There is a floored loft over the whole, lighted by doors in the ends, which is used for storing grain and agricultural implements. These are hoisted by a block and tackle through trap doors. The building rests on 52 oak posts, resting on stone bases, set two feet in the ground, and coming six inches above the surface. It is built entirely of native oak and walnut. The posts at one end are 10 feet long; at the other, a little over 12, on account of the slope of the ground. The cribs will each hold 6,080 bushels of corn, allowing three half-bushels for a bushel of ears. Mr. Moore adds: "Tell those Down-easters to sell their little ten-acre patches, and come out here and buy 160 acres, and have plenty of money left to stock it well." In behalf of the "Down-easters," who enjoy proximity to good markets and don't like to get far beyond the smell of salt water, we tell him, if he thinks he can afford to do with less land and smaller corn cribs, he may sell his quarter section and get money enough to buy a ten-acre farm east, but not have money enough left to stock it.

Barn Cellars free from Posts.

Manure cellars under the cattle and in first-class barns have been the subject of no little discussion among progressive and sound-thinking men. There are fairly two sides to the question. By means of cellars a very large quantity of excellent manure may be made with a minimum amount of labor. With tight floors and thorough flue ventilation, the cattle get no harm, the stables are warm, and the air in them pure. Those who object to them do not claim greater profit, but a better quality of manure, (with a greater proportionate amount of labor), a greater degree of freshness and purity of air in the stables, and in the whole barn. In this they are, indeed, right, unless great and constant care is taken to maintain cleanliness and ventilation. In measuring ordinary farm profits merely, the preference is to be given to the plan of storing the manure in the cellar. We present here a communication from our Shaker friend, Elijah Myrick, upon the subject. He says:

"The important subject of barn cellars seems to have passed the experimental stage, and the real practical necessity and profit to a farm being fully established, it only remains to employ the means to make it the most convenient and effective. To most farmers this is the only building to which they look for profit. And it is for their interest that it should be so constructed and managed as most easily to secure it. A cellar under a barn is as cheap as it is necessary, and should be made a source of as much profit, or more, than any room under the roof. For making and keeping manure, storing tools, keeping hogs, sheep, and small cattle, the room is almost indispensable. I have in mind a barn 140 by 45 feet, with 26 feet posts, built in 1831, without any cellar; otherwise it combined many of the modern improvements. In 1855 it was raised eight feet, making a nine-foot cellar under the whole, counting on the advantage of

the cellar for manure alone. Without any extra labor, the hay on the same land has nearly doubled, which is attributed wholly to the increased quantity and quality of manure. The barn being very heavy when filled with hay and cattle, it was thought necessary to put posts under the two rows of center posts, thereby causing very serious and objectionable barriers to a free use of the cellar when carting in and out, though the posts were 12 to 15 feet apart.

That there should be no unnecessary obstruc-

tion in depositing and drawing from the 'Farmer's Bank,' these posts are now being removed with safety, and at an expense by no means out of proportion to the convenience. The accompanying sketch of a section of a frame shows a very simple method of supporting a frame. The rods are made in pieces, coupled together under each beam, the couplings being about 4 inches long and 3 inches in diameter with a flange on the top end, which serves as a collar to support the beam above it. Being thus connected and with a nut and collar at the top and bottom ends, the rods make a cheap and sure support. The collars should be made a little crowning on the face side, and then they will not break. By this method the cross beams may all be whole and much stronger than when framed into middle posts. Then they will sustain all lateral pressure, and be strong enough to fully compensate for lack of braces. The roof will be very strongly braced. The long braces under the eaves are not objectionable;—one long brace is worth two short ones, in our opinion.

I have seen several large barns trussed up in various ways. Some have worked well; others have failed to meet the expectation, for want of proper construction. In all, so far as I know, both frame and rods have been used; that is, they have been framed without any reference to using rods, and afterwards they were applied, making great and needless expense of labor and material, and the necessity of splicing either the beams or posts where they cross each other.

The illustrations show simple, neat, and durable structures, and a pleasing style of architecture, as well as widely applicable. Fig. 2 represents a section, or rather the different modes of supporting the different sections, in the barn

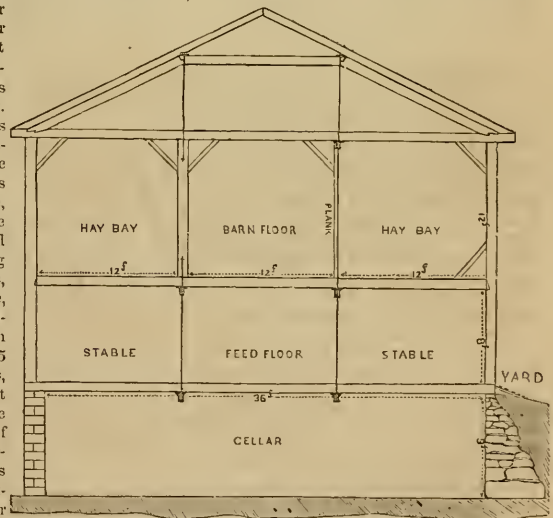


Fig. 1.—SECTION OF BARN.

referred to above, now having the posts removed. The right hand post has the lower part removed in front of the cattle; on the left hand side the sill is secured to the post by a joint bolt running up into the post. Fig. 1 represents two ways of supporting the frame of common barns when built new. They both show double stable barns; that is, on the first floor there are two stables running the whole length on either side, and a feed floor in the middle. On the next loft is a hay bay on each side, with drive floor in

the center. This is, however, not the most common way of building, but it has many advantages, viz.: nearly double the stable room in the same length, and a feed floor always intact, neat, and clean; on the next loft a drive-way that never interferes with the feed floor, and may be used for storage most of the year, if desired; then the convenience of throwing the hay down on a level with the floor on either side, with but very little pitching up; and finally, a barn of 40 feet in length will stable more cattle, and store more hay, than one in the last case, 60 feet long—while the only items of extra

Oaks to live, coalin' was a good bizness, and a feller had a chance to make suthin' extra on swappin' horses and pitchin' quates. But neow every body is so poor they can't pay the boot in a trade, or the stakes, when they git beat in quates. Tell ye what 'tis, Uncle Jotham, there aint coppers enuff in the White Oaks on ordinary okashuns to buy a decent glass of likker. I'm gwine to sell out airy, and come on to the street to live, and so keep from comin' onto the town."

"Mighty slim chance for ye here," said Seth Twiggs, bauling out a tinfoil package from his pocket, and thrusting in his pipe and forefinger

at the top. "Ye see, the widdler's eighty acres wouldn't buy five here, throwin' in the widdler, young ones, and all. Property's ris here worse than emptins, the last ten years."

"Wal, I guess the old man wont hold on forever," said Kier, looking up the hill, where Jake Frink still leads a slipshod life.

"It's poor bizness waitin' for dead men's shoes," said Uncle Jotham. "Better run that coal cart offener, and swop hosses less. Pitchin' quates and takin' the stakes in likker don't pay in the long run. Land aint worth much in the White Oaks or anywhere else, unless you work it. They work the land down here and pretty much everything else. Any thing, or anybody, gets lick'd that lies idle."

"Yes, yes," said Kier, "I remember them lickin's. That's what started me off to the widdler's, where things went easy."

"And folks round here take the *Agriculturist*," chimed in Seth Twiggs, whose pipe by this time was in full blast. "More'n forty copies come to the Hookertown post-office, and 'tain't more'n twelve year ago there wa'n't but three, and I was the fourth man that took it, and I shouldn't 'ave done it if it hadn't been for the woman. Ye see, she offer'd to pay for it if I couldn't. She laff'd consuemly when I set up readin' on't the fust night it cum till smack twelve o'clock."

"A pretty state of things we'll have here in Hookertown shortly!" exclaimed George Washington Tucker, who had now joined the party. "What with your Agriculturists, and old Bunker's experiments, and everybody aping him, and snappin' up every bit of land that comes into market, there wont be any chance for a poor feller to live in town. Rents have more than doubled in five years."

"Doubled!" exclaimed Benjamin Franklin Jones. "I've got to pay a hundred dollars for my place this year, and ten years ago I got it for twenty-five. Some say it's the war, and some say it's short crops. But that's all nonsense. Tim Bunker and the paper is at the bottom of the whole of it. Ye see, when that salt mash was reclaimed, and the bottom knocked out of that horse-pond, at the foot of Jake Frink's hill, everybody took to drainin' as if their everlasting fortune was gwine to be made

right off. There aint a swamp anywhere within five mile of Hookertown neow, but what is as dry as a bone, and kivered with the tallest kind or herd's grass or corn. Such a hankerin' arter land I never expected to see. Folks aint no plentier than they used to be, but land is a deal skaser, and growin' more so. There's no kind of a decent chance for poor folks to live."

This talk of my neighbors shows the drift of public opinion on the real estate question. In some communities farming lands have risen and quadrupled in value within the last twenty years. In others, they are worth no more than they were a hundred years ago, and hardly so much. Jones has got hold of the philosophy of it, though he is not much of a philosopher, where his own affairs are concerned. In the White Oaks, and places of that kind, land is cheap because cheap people own it, who think a good deal more of shooting-matches, horse-races, and poor whiskey, than they do of farming. As Kier Frink says, "there aint a man of 'em but would sell his soul for a chaw of tabacer." Kier is a little disgusted just now, and perhaps the statement is a little harsh. But it stands to reason that the land isn't worth much unless you work it, and get something out of it. If it bears nothing but wood, cut off for coal once in thirty years, everybody presumes that is all it is good for. Nobody that has capital wants horse jockeys, gamblers, and loafers, for neighbors, and so land is cheap in the White Oaks. Land is worth any sum you can make it pay the interest on, and take care of itself, and it isn't worth a cent more. Some is dear at ten dollars an acre, and other is cheap at \$400 for farming purposes. And it does not depend altogether on its original character. Poor land can be made productive by right treatment, and pay its way as well as that which is good. That horse-pond lot was poor property for Jake Frink at twenty dollars an acre. He did not get his interest from it at that price. It certainly is worth three hundred to me, aside from the abatement of a nuisance, which it always was, until it was drained. A variety of causes have made land dearer about Hookertown. There are more people and of course more purchasers of homes. The place has felt the effect of the war, and of a depreciated currency, which makes almost every thing dearer. But this cause has affected the price of land less than most other property. Improved husbandry has more to do with it than anything else, and in this matter agricultural societies, papers, and books, have had their influence. A good farmer put down in any community, raises the price of land all around him. If he gets eighty bushels of corn to the acre, and makes it worth three hundred dollars, his neighbors will not long be content with twenty-five. Big crops raise the reputation of the land. They tell every year upon the purse of the owner, and when he wants to add to his acres, and comes into the market to buy adjoining land, he cannot buy at the old prices. He has been all the while working against himself as a purchaser, and raising the price of his neighbors' farms. Just beyond Shadtown there is a big plain, where any quantity of land could have been bought twenty years ago, for fifteen to twenty dollars an acre. It was difficult for farmers to get rid of it, even at these prices. It is now worth an hundred dollars an acre. A fish oil factory in the neighborhood made cheap manures, and started a better style of farming. Here in Hookertown, we have not only cheap fertilizers, but a constantly increasing class of reading and thinkin'

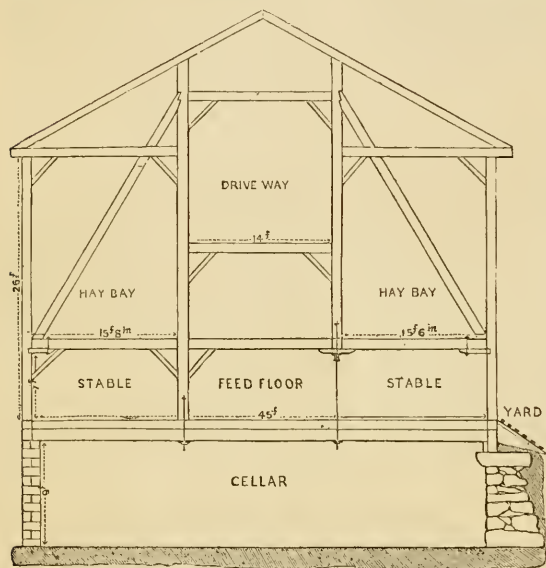


Fig. 2.—SECTION OF BARN.

cost are a little 'wharfing up' at one end for the drive-way, or approach to the barn-floor.

Much might be said on the general economy of building barns to save expense, and at the same time secure more convenience. Doubtless any one who rightly appreciates the value of a barn cellar can readily see the superior advantage of a cellar free from posts, over one with two rows of posts, as is most common, or the better way of only one row of posts. But with one row of posts there is the necessary expense of having large sills under the common ones, and also long braces, which are somewhat in the way; besides, one row of posts fails to give the frame proper and even support, and either way will cost quite as much as if supported by rods, etc., put up with proper architectural skill. And yet allowing that it would cost for each post five to ten dollars more to support, it would be money well invested."

Tim Bunker on Real Estate in the White Oaks and Hookertown.

"Taint worth so much by a hundred dollars as 'twas eight years ago, when you married the widdler," said Uncle Jotham Sparrowgrass to Kier Frink, as he stopped his horse to blow on Hookertown street yesterday.

"That's so," said Kier, sticking his old boot into the high wheel of his coal cart, for a rest. "But what's a poor feller to do, when property is all the while fallin', and money's gettin' more skase? Ye see, when I fust went into the White

farmers, who are all the while putting more brains into the soil, which starts crops faster than bony fish. The Farmers' Club is active, and Deacon Smith and Mr. Spooner keep talking, and Seth Twigg smokes out a good many errors in the course of the year. The draining and the manure, and the new tools and seeds, tell their own story, and, as Jones says, "everybody has a hankering arter land." Farms, like putty, las ris. The *Agriculturist* subscription list has ris also, from one to forty, and real estate agents, if they were fair, would vote it a medal. Hoping they will do the clean thing, I am,

Yours to command,

TIMOTHY BUNKER, Esq.

Hookerton, June 15, 1868.

More Turnips Wanted.

The high price of ruta-bagas in our city markets, the past spring, (two dollars a bushel at retail,) shows clearly that the supply is not equal to the demand. Ruta-bagas can be raised for twenty-five cents a bushel, and the round turnips, as a stolen crop, for less than ten cents. Farmers away from the large markets pay very little attention to this crop. It ought to have a place upon every farm where hogs and cattle are kept, without reference to city markets. Of course, if turnips go up to 75 cents or more a bushel, it will ordinarily pay better to sell them than to consume them upon the farm. But if prices are low, the farmer always has a good market at home. Most of the turnips raised in England are turned into beef, mutton, and wool, before they are sold. Our climate is not quite so favorable as the English for this crop, but we have never found any difficulty in growing satisfactory crops of all the varieties of turnips. They are not nearly so nourishing as the potato, but the yield is four or five times greater. They are valuable to feed to milch cows along with hay, Indian meal, and oil cake, good for fattening bullocks and swine, and exceedingly profitable for sheep, whether one is making mutton or wool, or raising lambs. We have found them valuable for home consumption, and do not like to be without them, even when we have plenty of beets and carrots. The old method, inherited from our English ancestors, no doubt, was to yard sheep at night for several weeks upon the piece of ground to be sown to this crop. Just before the 25th of July the ground was plowed and harrowed very thoroughly, and sown with wood ashes. The turnip seed was sown broadcast, and put in with a garden rake, or bush harrow. The crop had no cultivation, and yielded from four hundred to eight hundred bushels to the acre. The soil usually selected was a sod or a fresh clearing. Upon new ground, the turnip is usually of fine quality, and the yield large. The yarding of sheep is a good preparation of the soil, but the broadcast sowing is discarded by the best farmers. No crop pays better for sowing in drills, for thinning, and for frequent cultivation, until the leaves are in the way of the cultivator. The drills should be from fourteen inches to two feet apart, according to the size of the variety sown, and the object for which they are raised, with sufficient space left between the roots for hoeing. Some of the strap-leaved varieties make short leaves, and the "Cow-horn" grows quite high out of the ground with a long tap-root. These may be set in the thickest drills, and quite close together in the drill. Though the hoe is quite necessary in the first weeding of the crop, nearly all the cultivation may be done with the harrow

and cultivator, and the aim should be to use horsepower as much as possible. This is essential to cheap turnips. After the leaves cover the ground, the crop may be "laid by." The ruta-baga is much more solid than the common white turnip, and requires a longer time to grow, and a richer soil. It is frequently sown in June, but the first week in July is early enough, on warm, loamy soils, especially if the crop is raised for food. This turnip is frequently grown upon ridges, and the manure placed in the center of the ridge, and covered with the plow. By the sea-shore it is a common practice to use rock-weed, freshly gathered, for this crop, bony fish, or the refuse after the oil is pressed out. Fish guano and superphosphate of lime are among the best manures for turnips, whether applied broadcast and harrowed in, or directly to the ridges. 500 pounds to the acre of the superphosphate or a half ton of the guano will be a good dressing. If the ruta-bagas are raised for market, they should not be allowed to grow too large. Roots from three to five inches in diameter sell much more readily than those of twice the size. They are easily kept in pits, or upon the surface of the ground, covered with straw and earth. The strap-leaved turnips are raised at very small cost, by sowing among corn at the last cultivating,—say the first week in August. If the corn is cut up by the roots early in September, the turnips have the ground the rest of the season, and frequently make 400 or 500 bushels to the acre on good soil. Let us have cheap turnips this year.

HAVING IN "CATCHING WEATHER."—Last year the weather was characterized as "catching,"—and from the beginning one would think this year had caught something, for it has been as showery and drizzly as the last along the sea-board. Almost anybody can make hay when the sun shines, but the problem may be presented to make hay when it does not shine. With the mowing machine, the tedder, horse-rakes, and hay caps, an active man of fair judgment may succeed, with a mere modicum of the direct heat of the sun. The principle is, *continuous drying*. The lack of sunshine must be made up by stirring, if the atmosphere is a drying one, and here a good tedder will be found most useful. Long exposure of clover to the hot sun is ruinous; the heads and leaves will fall off, and these constitute the best part. Grass containing clover should be dried rapidly until thoroughly wilted, and while still green and hot, cocked up. If it has a little sunshine when first cut, it will cure in ordinary catching weather in the cocks, covered with hay caps, provided it can be opened out and shaken up now and then. The hay will be surprisingly green and good, and it will not require much labor to make hay in this way.

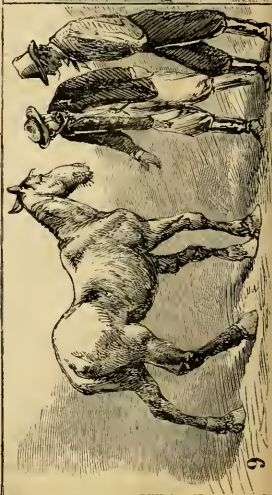
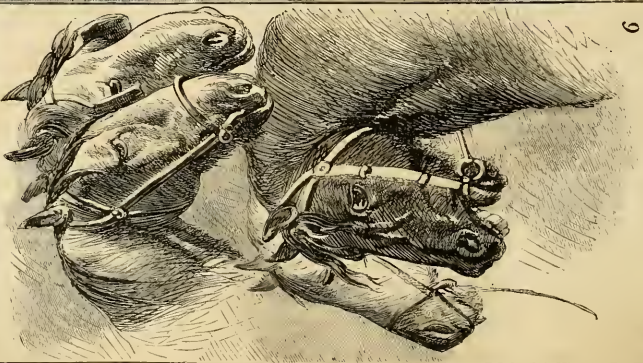
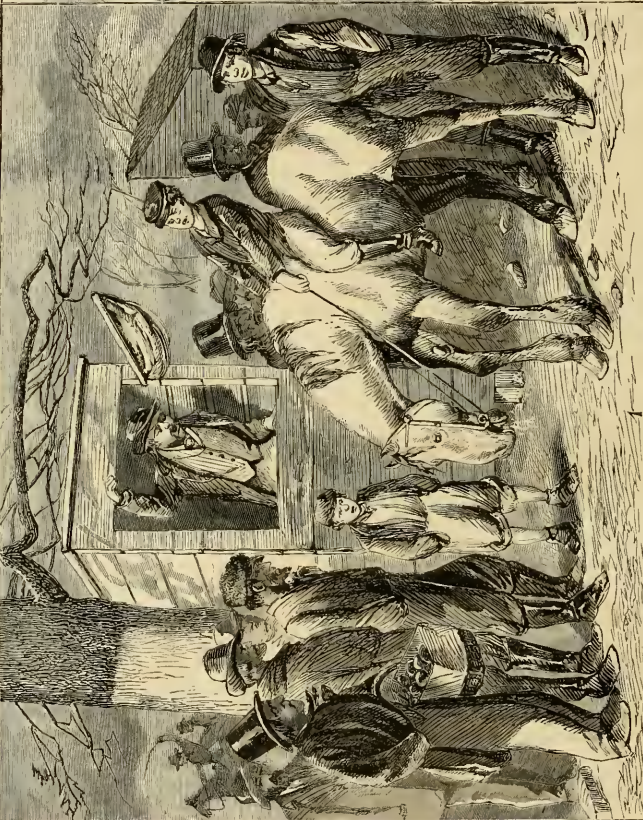
On His Last Legs.—(See next page.)

The City of New York offers a market for almost every thing, from the glittering gems that dazzle the eye in the show cases, to the miserable rags that the squalid poor cast off, and the more abject still pick from the gutters; even the street sweepings bring money. If the fame of some wonderful exploit on the turf or trotting course makes a horse valuable, here he finds a buyer, and \$5,000 or \$30,000 will not long stand between the fancier and the object of his ambition. From such transactions as these, the trade in horse flesh drops off rapidly

until we reach the more modest figures of \$500 to \$1,000 for good animals or for pairs of horses, and comparatively few are sold even at these figures, the majority of sound horses selling at perhaps \$150 to \$200 apiece, or \$300 to \$500 per pair. Still there is ever a ready market for horses, no matter how crippled and broken-down. It is this trade which brings out that phase of human nature which renders horse dealing, as a profession, of such disrepute. In fact, the rarest development of the peculiar characteristics which this calling seems to elicit, is to be found where the very poorest classes of horses are brought for sale. Our artist was so struck with the scenes and the surroundings of an up-town horse market, that he quietly employed his pencil in portraying them. They have a little the air of caricatures, but this is owing to the difficulty of otherwise vividly presenting the reality. The auctioneer and his associates who manage the thing would feel greatly incensed should we impute to them other than the most high-toned sense of honor in their way,—and we do not. We owe them thanks for the opportunity we have of exhibiting this interesting stage of horse life. The pampered pet, the pride of the park drive, the faithful servant and drudge, has served many masters, and a broken-winded, spavined, knock-kneed cripple, he is brought once more to the auction block. He has passed through 12 to 20 years of varying and eventful scenes. Soon will follow the last—the drop-scene. Now for the last time he passes under the red flag, and "going—gone"—is enforced by the auctioneer's hammer, and followed by a change of masters.

The central group needs no further explanation. No. 2 represents the test applied to cart-horses. The wheels of a truck being blocked, it is loaded with men and dragged up and down the sandy way. No. 3, an animal with a fine Roman cast of countenance, not recently shod, nor suffering from too high feed, comes up, going a little lame. "There's nothin' the matter 's this hoss, Mister, but a verry slight blemish on his hign fore-leg; otherwise he's a perfect' hoss." No. 4. "Here, gentlemen, is a splendid animal for the saddle, and no doubt a good feeder." Any one who doesn't believe it is at liberty to offer him a peck of oats. We suppose No. 7 must exhibit unmistakable marks of having seen better days, for the word comes from the stand, "Gem'en, this 'ere Shetland belonged to a young lady on 5th Ah-yner, and she sold him 'cause she was goin' to You-rope." No. 8 is announced as "a good stepper," and exhibits his accomplishments to the slight inconvenience of bystanders. The public appeal having failed to bring the desired response, or as a personal favor, No. 9 is offered at private sale, and at a bargain. "Well, I tell you what, Mister, there is one great beauty about that hoss—an that is, he's all together." The portraits already given would be incomplete without those on either side of the central picture, Nos. 5 and 6.

The poor horse endures this old age of suffering and toil because his value is solely in his labor. In Europe, the societies for preventing cruelty to animals have for years been endeavoring to remedy this evil, by encouraging the consumption of horse flesh as food. This is now so far on the increase in some European cities, that it really seems as if there might be a market for the flesh of old horses. It is said that old, well-fattened animals are much tenderer and better than young ones, and there is really no reason, except in our prejudices, why we who eat swine might not eat horses.



Beautiful "Foliage Plants."—Begonias.

The old *Begonia fuchsoides* and *B. incarnata* have long been prized by cultivators for their flowers, and they still remain among the favorite tenants of the green-house. It is comparatively recently that a set has been introduced, which are valued more for the beauty of their foliage than that of their flowers. The first notable one of this kind was *Begonia Rex*, with its enormous leaves of rich green, with a broad silver zone. One of the first plants of this sent to this country came from Kew to Cambridge, and we well recollect the pride with which Doct. Gray placed the plant in a proper light, to show its beauty, and our astonishment that a leaf could be so charming. Greater was our astonishment to find that this plant could be propagated from the leaf, and that from a leaf planted in a pot a dozen plants would spring up. But all this was years ago; now leaf propagation is a common thing, and *Begonia Rex*—then so rare and so wonderful to us—we have seen cut out of Ellwanger & Barry's green-houses by the armful to get it out of the way. Since then the reign of *Rex* has been contested by many others; new species have turned up, seedlings and hybrids have been obtained, until it would take a long list to catalogue all the fine Begonias. The shape of the leaves—they being unequal sided—is quaint in all; in some, the leaf stalk and under side of the leaf are clothed with long hairs, and have the appearance of a beautiful crimson plush; in others, the colors of the surface of the leaf are strikingly beautiful, often like the richest satin, and again presenting a metallic appearance that is really charming. Messrs. Olm Bros., of Springfield, Mass., imported a lot of the finer sorts last year, and sent us specimens of the leaves. Where all were so beautiful it was difficult to choose, but we selected two that we thought best adapted for illustration, and we think that our artists have succeeded in giving an idea, as well as can be done in black and white, of these two varieties. Though chiefly seen in green-houses, these finer Begonias are admirably adapted to out-door decoration, and did florists properly put them forward they would soon take a high rank among what are absurdly called "foliage plants." For hanging baskets, rustic vases and stands, they are most admirable, and were they cheap enough, as they might easily be, they would come in play for decorative beds upon the lawn. Of course

they are not at all hardy, and neither is *Colerus* and others of our ornamental plants, though one species, *Begonia discolor*, usually stands the winter in France, and doubtless many of these fine sorts, when tested, will be found to winter in an apartment where they can be

kept from freezing. The Begonias do best in a rather substantial soil which contains a good share of vegetable matter. The name was given in honor of Michel Begon, a patron of botany, who lived in France in the 17th century.



BEGONIA PICTURATA.

Paths in Public and Private Grounds.

The old gravel walk has had its day. The scuffling, raking, dressing, rolling, weeding, and other matters of care, are to be avoided, if possible. A good gravel for making walks is only to be found here and there, and in the

put down, it does not allow the growth of any weeds, and requires no fussing. There is an elasticity about a path of this kind that makes it especially pleasant to walk upon. There is an asphalt walk across City Hall

Park, and in crossing from our old office to our new one, we prefer to go a little out of our way for the sake of enjoying this walk. Thousands of people traverse it daily, and it retains its shape without losing its elasticity. It was put down with a layer of coarse gravel and tar, then coal ashes, and upon the top a layer of fine gravel or coarse sand. The friend above alluded to simply grades his walks, flows them with gas tar, and then puts on all the sand that will stick. In a few days the walk may be used. Paths of tar, etc., have been tried in Central Park, and the Controller, Mr. A. H. Green, in his recent admirable report says—cautiously, it is true—as follows: "Several pieces of walk have been laid in the Park during the fall, with a composition of tar, gravel, and cement, coal tar having been first used, and subsequently the ordinary tar of commerce. The appearance, when properly mixed and laid, is thus far the most satisfactory of anything that has yet been tried: it is readily formed and shaped to meet the various conditions of the ground through which it is laid—it is compact and pleasant to walk upon—it is claimed to be free from dust, and that it is not so materially affected by the heat or cold as to diminish its practical usefulness. It is not intended to express any opinion

as to the merits of this combination of material. If experience proves that it answers all that is promised, it will be very serviceable in all places where walks of a rural character are desired, especially on those which, from the steepness of the acclivity, are liable to wash."

Now, we have thus replied to many letters, and told all we know about walks of this kind. We cannot find that there is any exact formula for making them. Doubtless gas-tar with sand, cement, coal ashes, gravel, or any similar substance, will harden into a good walk. If any of our readers have any experience in this matter that will benefit others, we hope they will kindly communicate it.

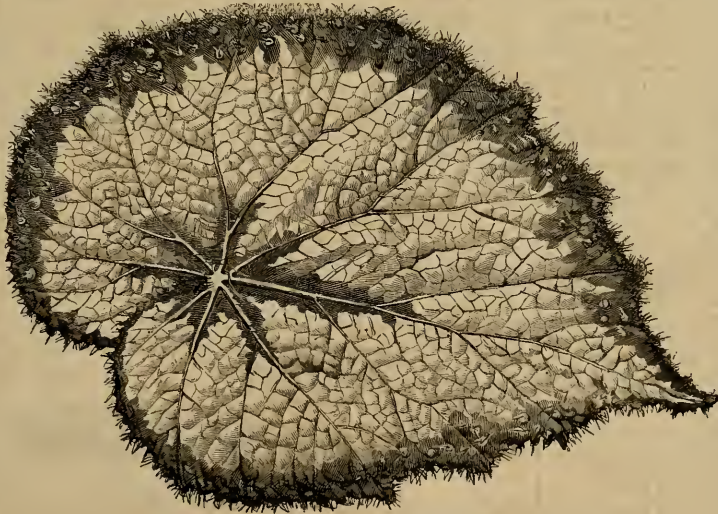


Fig. 2.—BEGONIA—QUEEN OF ENGLAND.

majority of cases a walk instead of being a pleasure is a nuisance. Some years ago we published an account of the experience of a friend in making walks with gas tar and sand. Some combination of this kind is destined to supersede gravel. It is permanent when once

was cut down to the ground, but the stump was not removed. No signs of vegetation were visible until the present spring, (1868), when, after remaining dormant for seven years, new shoots appeared from the roots. We have known plants to remain in this way for a year only,

A LONG SLEEP OF A PLANT.—The following remarkable case of suspended animation in a tree is recorded by Shirley Hibbard in the Gardener's Magazine, (London), as having occurred under his observation. A large bay-tree having been injured by the winter of 1860-61,

The Grape Vine—How it Grows and What to Do with it.—6th Article.

Almost every yard or garden in the suburbs of our cities and towns has a grape vine, if no other fruit-bearing plant, and every year thousands of vines are planted on this small scale, one or two in a place. Amateur gardeners are impatient, and will start with large plants, and we have seen this spring numbers of men taking home vines that were fit only for the brush heap. These vines are set, and a jobbing gardener comes each spring to "prune." The man is paid to prune, and is, of course, bound to cut something, which he does without any definite notion of what he is doing. The result is that in a few years the vine is mainly a mass of old and useless stems, and the owner likely sends a note to the *Agriculturist* to ask what he shall do with it. It is to prevent such mistakes as these that we have written a series of articles, which are not intended for vineyardists, but for those who have no knowledge at all

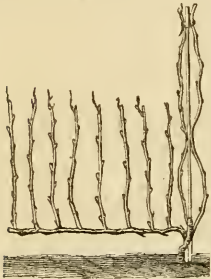


Fig. 15.

upon the subject of planting and growing vines. The methods of training already described, as well as others to be presented, are all suited to garden culture. Circumstances vary much in different gardens, and it is not always practicable for one who would like to grow a vine on the Horizontal-Arm plan, to follow the directions that have been given. It often occurs that a trellis upon a house or fence must be several feet above the ground, in which case the arm or arms must be started high up on the stem, instead of within a foot or so of the ground. This will be further illustrated when we come to the subject of covering screens and arbors.

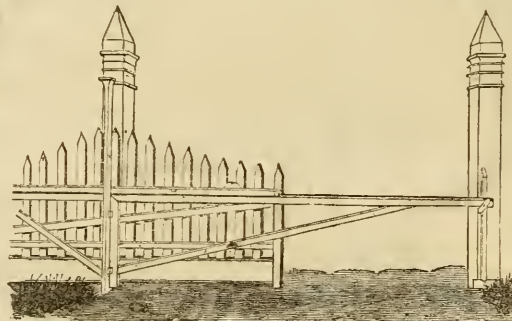
A modification of Horizontal-Arm training, called Guyot's System, is much liked by some good cultivators, while others do not approve of it. The system, like that described last month, requires a vine with two good canes to start with; one of these canes is pruned to two buds, and the other is cut off at the length of two feet, and laid down as a horizontal arm. From the arm upright shoots are trained for fruiting, and stopped when about two feet high, as already explained. The shoots from the two buds are trained upright and allowed to grow about five feet high, when they are pinched. The laterals are kept pinched, and every pains taken to secure strong canes. The vine in autumn will present the appearance given in figure 15. In pruning a vine like this the horizontal arm is cut away entirely, and the lower of the two upright canes bent down to replace it: this cane is to be cut of the proper length, which the second year may be four feet, and the other upright cane cut back to two buds. In this system we have one horizontal arm, which is renewed each year from an upright cane grown for the purpose. This plan, of which a mere outline is given, is fully elaborated in Mr. Peter B. Mead's work on Grape Culture, from which the above illustration is borrowed. In some vineyards started on the Horizontal-Arm system, we have seen a sort of compromise between it and other plans carried out, until it became

nearly the old Alternate-Renewal system. Instead of pruning the upright canes on the arm back to two buds, (see last month), a portion of them are pruned longer or shorter, according to their strength, and two, three, or more feet left. The next season these canes are expected to produce fruiting shoots along their whole length. This breaks up the system, as in cutting back these canes after they have fruited, there is no certainty of finding a bud to cut to, to renew the cane. We have given in these articles only the principal modifications of which the Horizontal-Arm is susceptible, and must leave it to notice other and different methods of training.

A word on the care of vines during the present month. Cultivation must be followed, and the soil kept clear of weeds by hand or horse-power. Keep the laterals in check, as already described in April. This operation, so often neglected, is absolutely necessary, in order to get a strong cane for future operations. Mildew, if it appears, is most successfully treated with sulphur, which should be blown upon the vines, especially upon the under surface of the leaves, by means of a bellows made for the purpose. Remove the larger insects by hand-picking. An insect will often take off the end of a growing shoot as neatly as if it were pinched. When this occurs, allow the upper lateral to grow and prolong the shoot, or remove it altogether, and allow the upper bud, which would have otherwise remained dormant until next year, to start.

A New Carriage Gate.

A gentleman who lives in the upper part of N. Y. City has contrived a carriage gate which answers his peculiar requirements, and thinking it may be of some use to others, we give an illustration and description of it. It would obstruct the sidewalk to have the gate swing outward, and as the ground immediately within the entrance rises, it would not be practicable to have it open inward, without making considerable excavation; so in this dilemma he arranged it to slide. The gate is made all in one piece, well braced, and like a section of picket fence. The illustration is taken from the inside of the grounds, and shows the gate partly open. The gate-way is represented as closed by a well-



CARRIAGE GATE.

braced bar, which is arranged to swing open towards the inside; upon the top of this bar is a rail upon which the gate moves by rollers, after the manner of a sliding barn door. A piece of scantling supported by posts, and bearing a rail, is placed to receive the gate when open. This gate is very easily opened. It is rolled away from the gate-way and the bar is pushed open—the bar being so hung that it will require no fasten-

ing back. The opening can all be done without moving from one spot. The bar, when closed, rests upon a post placed to receive it.

The Treatment of "Bedding Plants."

By "bedding plants" we mean those tender things that are put out for the effect they will produce in summer. Among these we include those valued for their flowers, like the Verbenas, as well as those, which, like the variegated Pelargoniums, Cinerarias, and Coleus, are grown for their foliage only. Many think that when they have set out these plants they have done their duty by them. This leads to bad effects, and we see miserable attempts at bedding. Verbenas, Ageratums, and all the flowering ones, need pegging down, and constant care to make them show their best. A daily attention is required, and one who wishes to make a show with these plants should keep them in good trim. Each branch, as soon as it is large enough to be blown about, should be held in place by some kind of a "peg." A willow twig bent like a hair-pin is as good as anything we have tried for the purpose. The "foliage plants" generally grow lanky and make anything but a desirable show, all for the want of the knife. Cut back freely all the kinds that do not seem disposed to bush out. Tolerate no Pelargoniums (or Geraniums, as some will call them) on stilts. Cut back the Coleus, and make it grow broad rather than tall. Cinerarias and Centaureas are disposed to run to flowers—cut them back. Keep all bedding plants under control. If they are in a bed upon the lawn, cut those upon the edge of the bed back so that the plants near the center will have a fair show. Do not be afraid of using the knife freely upon any of them.

The Effect of the Graft upon the Stock—Graft Hybrids.

It has been accepted as a law by horticulturists, that the graft produces no effect upon the stock into which it is inserted, other than, it may be, to communicate disease. A number of cases have been from time to time observed, which would go to show that there are exceptions to this rule. In May 1867, Meehan gave in the *Gardeners' Monthly* an account, with an illustration, of a pear which had been grafted upon a Mountain Ash—which, by the way, is not an *Ash* but a kind of Pear. It is a well-attested fact, that seven inches below the junction of the two, a pear shoot appeared upon the Mountain Ash stock. Mr. Darwin, in his recent work on the Variation of Animals and Plants, has brought together a number of facts of similar import. Another curious point upon which Mr. Darwin in this work furnishes strong evidence, is the production of graft hybrids. By this is meant the commingling of the peculiarities of the stock in the graft, manifested in flowers and fruit intermediate in character between the two, after the manner of hybrids produced from seeds resulting from fertilization with foreign pollen. Adams' Laburnum, it is pretty well established,

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originated in a shoot from a common Laburnum, with yellow flowers, into which the Purple Laburnum had been grafted. The same tree produces flowers intermediate between the two sorts, and those also which have reverted to one or the other parent form. One cluster will bear both yellow and purple flowers, and a single flower has been seen divided into halves, one half being purple and the other yellow. Instances are recorded in which blue and red hyacinth bulbs had been cut in two, and the halves of the blue and red grew together and produced a united stem with flowers of two colors on opposite sides, and not only this, but flowers in which the two colors were blended together. Red and blue potatoes have had their eyes grafted reciprocally into one another, and some of the tubers resulting from the plants thus produced, showed indications of a cross. Mr. Darwin does not cite the case of our sweet and sour apple, but does that of a French variety still more striking. Mr. Barry long ago suggested that our much-talked-of sweet and sour apple was a graft hybrid. We thus briefly allude to this interesting subject, to direct attention to cases that bear upon the point. Isolated facts that in themselves seem to have but little importance, when collected and classified as they are in this remarkable work of Mr. Darwin, to which we have referred, often tend to give us new views of the workings of nature.

Sticks, Strings, and Wires.

Our Pennsylvania friend will say that sticks and strings in the garden are "agin' nater." Of course they are—and so is all gardening. If one attempts anything at ornamental gardening, if it be only one plant in the front yard, we wish him to do it well. If it be only a Morning Glory against the house, let him give it a good strong string to run upon. Attention to or neglect of sticks and strings makes all the difference between a well-kept place and a shabby one. A slight support will often make a plant show at its best, while the same plant if left to be whipped about by the winds and beaten down by the rains would be a nuisance. Do not let these artificial aids be conspicuous. The stores have green sticks with white tops for Dahlias and such plants. Sticks like these are an abomination. So are the complicated trellises which come to New York by the cart-load. Where supports are to be used, keep them out of sight; common sticks with the bark on are as unobtrusive as anything, but if sawed stuff must be used, paint it of some drab or brown color. Painting of these sticks is easily done. Get the painter to mix a lot of thin paint; then have the tinman make a cylinder as long as the stick to be painted—a sort of stove pipe with a bottom to it—put the paint into the cylinder, and dip the sticks. The painting can thus be done with great rapidity and better than with a brush. As to strings, a great variety of material may be used. Don't let it be too strong, only have something always at hand, even if it be the ravelings of an old stocking. A straggling plant, or lot of plants, can often be made comely by simply drawing a string around them. We like to have small galvanized wire handy, and find it of essential service in the garden. Crinoline is no respecter of plants, and where there is a travelled path near a border the plants are likely to get the worst of it. We stretch a wire about a foot above the surface along the edges of the border, and defy crinoline to do its worst. Wire of this kind comes in nicely for all sorts of

climbers; it is cheap, and much more permanent than strings, which are always too tight or too slack. For general tying we have found nothing better than a good, soft, cotton twine—not the grocer's article, which is more starch than cotton, but a well-made, honest, pure cotton twine.

Have You Any Chrysanthemums?

If any one who has a garden has no Chrysanthemums we advise him to get some at once. It is not too late, and any florist will give him a set at a small cost. Put them out and then give them good cultivation. Because they only bloom when everything else has done they are too often neglected. We appreciate them when in flower—flowering after the hard frosts have killed all the tender plants—but we do not always think in time that it is the summer care that gives us this autumn harvest of bloom. How glorious they are in the November days, bringing back memories of summer! Let us, then, now prepare for this enjoyment. The first thing to do with a Chrysanthemum, after it has fairly started, is to snub it. Remorselessly pinch off its top, and it will give thanks for the treatment by throwing out a dozen side branches; pinch these again, and again, until a compact bush is obtained. It will seem hard to the inexperienced to do this, but in autumn he will be rewarded by such a profusion of flowers that he will regret that he did not pinch a little more. We are now speaking of Chrysanthemums out of doors and in common gardens; those who make show plants for the exhibitions grow but one or few flowers on a stem, and aim at a different object. We go in for a perfect blaze of flowers, without regard to the perfection of individual ones. Give the sun of Indian summer something to reflect its own rich light—therefore let us have more Chrysanthemums.

A Word About Budding.

We have probably a dozen or twenty letters asking us how to bud. Some might consider it an annoyance to be asked to repeat, year after year, the very elementary things of horticulture. We do not. The *Agriculturist* is for the general public, and what its readers ask for they shall have—so far as we are able to supply it.—Now about budding. If our correspondents could go and see a nurseryman put in one bud, they would learn more about the operation than from all the descriptions that were ever written. If they cannot see the thing done, we will do the best we can to help them. The bud used in this kind of propagation is formed at the base of a leaf—in its axil, as the botanists say. It has within it all the possibilities of a branch. If left where it is, it might become a branch. Just as the seed is planted in the soil we take this bud—which is for our purposes a seed—and plant it, not in the soil, but in another tree. The mechanical operation is so simple that a boy or girl of twelve years can do it. Stocks fit to bud are the first requirement: i. e., those in full growth, and of which the bark will "run," or easily part from the wood. Buds well developed are the next. Cut the twig for the "stick of buds" from the variety desired to propagate; cut off the leaves, *leaving the leaf stalks, and do not let it dry*. Make a T incision in the bark of the stock, on the north side, and as close to the ground as a smooth piece of bark can be found; cut out a bud from the "stick of buds" with an inch or inch and a half of bark, lift

the flaps at the angles of the T incision of the stock, and push this bud down under the bark; cut the bark of the bud off even with the horizontal part of the T incision, and then bind it tightly with bass bark, corn husks, old rags, or whatever is at hand, of course leaving the bud exposed. In the majority of cases the bud will next spring be found alive and ready to grow, when all of the stock above it must be cut away. Now, we have briefly described what we have several times given before with figures. However much we may wish to do so, we cannot give the same illustrations over and over, and those friends who do not find here sufficient directions to enable them to bud had better send for the *American Agriculturist* for July, 1866.

Do You Belong to It?

By "It," we mean the American Pomological Society, and by "You," we appeal to every fruit grower who can afford a dollar a year for the promotion of pomological knowledge. The Society is a National one, and its aims are the development of American Pomology, in its broadest sense. It collects what is known as a guide to those who would follow in a trodden path, as well as to that large class of experimenters who would essay the unknown. The President of the Society is that venerable—we had almost written revered—pomologist, Col. Marshall P. Wilder, and its list of officers and members includes the fruit growers of the country. Its meetings are held every two years—(next year in Philadelphia), and its "transactions" are more important than its meetings. Each member who pays two dollars gets a copy of these transactions, and they contain the pomological knowledge of the country "biled down." The fruit committee, comprising such men as Downing, Barry, Elliott, and others of that stamp, make up the list of fruits—a catalogue "raisonné," as the French say—which shows at a glance the standing of the different varieties of fruits in the various States. We do not place any high estimate on the reported discussions, but this catalogue or fruit list is of great value. It is made up by men of the highest ability, men who work solely for the good of the cause, and it is the business of every fruit grower to see that he contributes his mite towards the publication of such valuable labors. Let us all go in and make the American Pomological Society a grand success.—N. B.—Thomas P. James, of Philadelphia, Pa., is the perpetual Treasurer.

ORCHARD GRASS IN LAWNS.—Orchard grass is valuable in its place, but that place is not on a lawn. There can be no more ridiculous exhibition than that we see from our office windows in City Hall Park. Some official goose last year sowed the "grass plots" with Orchard Grass, and this year other geese have been trying to hack the grass into something like subjection. When the city officials succeed in making a lawn out of Orchard Grass we shall let our readers know it. Persistent mowing is the best thing that can be done with it, but this will hardly make lawn grass of it. Better root out the ugly tufts altogether, and put in Red-top, June, or Blue Grass, or any other kind that does not make tussocks. The two worst among our common grasses for a lawn are Orchard Grass and Timothy; no mowing will break up their tendency to form stools or tussocks. With Red-top, June or Kentucky Blue Grass, or Italian Rye Grass, a dense and velvety sward may soon be formed by frequent mowing and rolling.



FORSYTHIA VIRIDISSIMA.

Early Flowering Shrubs.

It was the singular good luck of Mr. Fortune to introduce into cultivation a number of plants that pleased the public taste, and they became at once popular. Among the Chinese plants introduced by Mr. F., is the Forsythia, a shrub named in honor of an English gardener, Mr. Forsyth. It is hardy, is easily propagated, blooms very early, and is handsome when not in flower—characters which tend to make it popular. The species generally cultivated is *F. viridissima*; another, from Japan, *F. suspensa*, is comparatively rare. The Forsythia forms a clump of slender, willow-like twigs, which, in April, before the leaves appear, are quite covered with hanging flowers, of the size and shape shown in the engraving. The color of the flowers is a bright yellow—indeed, almost too yellow, when the shrub is used very abundantly. The leaves are long and narrow, rather firm, and of a green so deep and rich that the plant is aptly called *viridissima*. In autumn the foliage turns of a dark purple, not so brilliant as we see in many other leaves, but yet not without elegance. It is a useful shrub to train against a fence or low trellis, being almost as manageable in this way as a vine. It is propagated readily from cuttings and layers, and by suckers from old plants. The Forsythia belongs to the Olive Family, which includes of our ornamental shrubs the Fringe Tree (*Chionanthus*), the Privet, and the Lilac. Among early flowering shrubs the old Japan Quince, (*Pyrus Japonica*), still holds its well-merited prominence. Indeed, there can scarcely be a more brilliant sight than a good bush of this in full flower.

Though not so early as these, an old, and with us favorite shrub, is the Bladder Senna, (*Coletea arborescens*). It will be seen at once from the engraving that this belongs to the Pea Family. The clusters of yellowish flowers are pleasing, but the shrub is most attractive when in fruit. The pods are curiously inflated, and when suddenly compressed, burst with a slight "pop," which makes it a favorite shrub with both old and young children.

TREE-BOXES.—Many persons in cities and villages paint their tree-boxes of a bright green. This is in the worst possible taste. The green of the box detracts much from that of the tree, especially when the tree is young. The color of a tree-box should be one which shall be as inconspicuous as possible; the box is a necessary evil at best, and ought to be kept out of sight as much as possible. Some warm drab or gray—some color that is not very unlike that of the trunk of the tree, is much better than a glaring green. We look for the time when our people will be civilized enough to allow tree-boxes to be dispensed with, but as long as heathens will hitch their horses to

trees, and boys will try their jack-knives, we must furnish boxes for horses to gnaw, and boys to whittle. But whatever may be the kind of box used, please don't paint it bright green.

Liquid Manure in Gardens.

But little attention has been given in this country to the use of liquid fertilizers, while in Europe they are classed among the gardener's important aids. In the market gardens around Paris, the liquid manure tank is regarded as an essential part of the establishment. Brick tanks thoroughly cemented are sunk in a convenient part of the grounds, and considerable expense is incurred in arranging a system of underground pipes to convey into it the urine and other liquids from the stables, and the slops from the house. The manure from the hen-houses and dove-cots finds its way to the tank, and privies are arranged for the laborers with movable boxes, the contents of which from time to time are emptied into the tank. There is hardly a farm or small place in the country on which there is not a great waste of fertilizing material, and the example of the French gardeners may be imitated with profit. A sunk cask may be made to serve as a receptacle for these usually wasted fertilizers, and the wash from the house be led into it by means of drain tile, or even a conductor made of boards. That attention is being turned to the subject of liquid manures is shown by several letters asking about the best means of distributing it. In Europe a wheeled apparatus made of boiler iron is used, but a barrel or cask mounted on wheels would



COLUTEA ARBORESCENS.

answer every purpose, and this may be moved by hand or horse-power, according to its size. The discharge pipe should be arranged after the plan of the street sprinklers used in cities. What is wanted is something to divide the liquid and distribute it along the row, much after the manner of a watering pot. The shape of this sprinkler will depend upon the surface to be watered. It may be a tin cylinder, with holes near the ends, and of a proper length to water two rows at once. The sprinkler should be connected to the barrel by a short piece of hose, which will allow its height to be altered as needed. The discharge may be regulated by a valve placed over the orifice, upon the inside of the cask. A block of wood with a piece of leather on one side will answer for the valve; this is to be held in place by a leather hinge, in a manner that will allow it to be lifted by means of a string attached to it, and which passes out at the hole through which the cask is filled. The valve should be weighted with a piece of iron or lead, to insure its closing tightly. The discharge is regulated by pulling the string.

In July, 1865, we illustrated a pump which would serve for raising it from the tank or reservoir, to the distributing apparatus. If the liquid is to be distributed by a sprinkler, care must be taken to use only the clear portions, as sediment of any kind would soon close the holes. The contents of a manure receptacle, like the one we have referred to, will vary in character, and no rule can be given as to the amount to be used. Excessive strength must be avoided, and if that in the reservoir is highly concentrated, it should be diluted. Manure waterings should not be given in very dry weather.

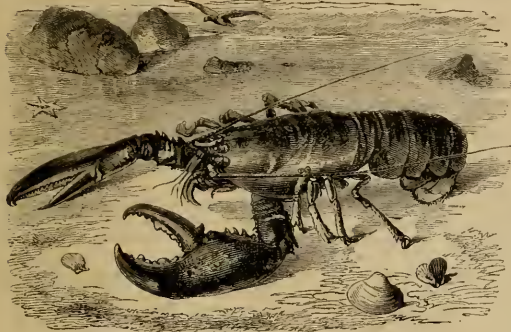
THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Sea-side Fare—The Lobster.

Those who live near the sea-coast have a number of articles of food quite unknown to those who dwell inland. A visit from the West to one of the Atlantic States owes much of its novelty to the different fare that these sections present. Thinking that it will interest our inland friends to see what

and the animal is ready to be opened. Break off the "claws," and crack them edgewise with a mallet, and take out all the meat. Separate the "tail" from the "body," and then by breaking off the edges the upper thick shell will be easily removed from the lower and thinner encasement. The solid "tail" meat will then be exposed. It will be found that there is a longitudinal strip at the upper surface of the tail part, which will readily separate, and beneath this there is a dark intestine, which can be easily removed; all the rest is clean meat. Now we come to the body part; a pull separates



LOBSTER—(*Homarus Americanus*.)

their salt-water neighbors feed upon, and at the same time give us a chance to say a word upon the proper use of the things themselves, we begin a series of articles on sea-side fare with the lobster. Railroads are great levellers, and they take our sea-coast things so far inland that our western friends often get lobsters, oysters, and the like, in exchange for the prairie-hens and pigeons they send us. But to the lobster. The engraving gives the general look of this, the largest of our crustaceans. Students of Natural History know that crustaceans include lobsters, crabs, spiders, and all those animals that have their skeletons on the outside of their bodies. We will not discuss the lobster scientifically, but merely as an article of food, and describing it thus, we shall use terms that will shock the naturalist—but we won't mind about that. What is popularly known as the "body," has the head, eyes, and long feelers, at one end, and at its lower side bears the feet, the two forward ones of which are enormously developed into "claws." These the lobster uses to catch and hold its food, and they give a formidable look to the animal. One member of the "claw" or pincer only is movable, and this, as soon as the animal is captured, is prevented from doing mischief by means of a wooden plug put in at the joint. The remaining legs are small. The "tail," or rear end, is jointed, and bends as shown in the engraving. It is furnished below with appendages which serve the animal in locomotion, and are used by the female for holding the eggs. Lobsters are found all along the New England coast to New York, and are taken in simple traps baited with stale meat or fish. When alive, they are olive-green, and are very pugnacious. They are kept from injuring one another by plugging their claws, as already mentioned. It is only in its living state that the lobster should be purchased as food—unless one is sure of the person who cooks them. There is probably no article of food which grows stale so soon as the lobster. Healthful when fresh, it is most pernicious when stale—and it becomes stale very rapidly. Buy the lobster alive and kicking. Never purchase a dead lobster, and never a boiled one, unless the reputation of the seller is established. Having the lobster alive, dump him suddenly into a large kettle of boiling water, well salted. Of course the crustacean will kick a little, but it is the quickest way to dispose of him, and much better than the English one of putting him on in cold water and gradually bringing it to a boil. Half an hour's boiling will be sufficient in most cases. The olive-green will be turned to a bright scarlet,

the lobster; but we should add that in the female is found the undeveloped spawn as a red mass, called the coral—which is highly valued by many. As an article of food the lobster cannot be called highly nutritious, but when fresh there is no doubt of its healthfulness. All along the New England coast, it is, in its season, a very common Sunday dinner. It is one of those articles that admit of any amount of seasoning. Many prefer a freshly boiled lobster with only pepper and vinegar—others like it only in a highly seasoned salad. To make lobster salad, the lobster should be chopped, but not too fine, and dressed with the salad dressing given in May. In making lobster salad, butter may be substituted for oil, and we think with advantage. Hot lobster is a favorite dish with many. Cut the meat moderately small, put it in a saucepan with plenty of butter and cayenne pepper, and serve when well heated through. About canned lobster—that depends. We have seen it perfectly good, and again when it has produced serious illness. If one eats canned lobster and gets ill, don't let him ascribe it to the lobster, but to the man who canned it.

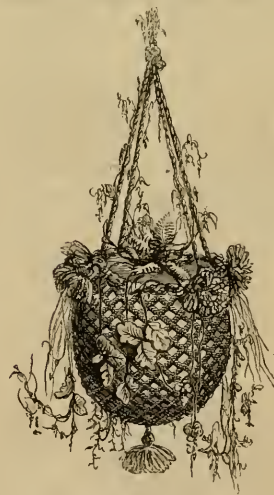
Preserving Green Corn for Winter.

The canning of corn in families so generally fails that we cannot recommend the trial. The next best thing to canned corn is that which is properly dried. The first essential is good corn, and the next is to dry it carefully before it gets too old. Mrs. M. L. Gage, of Ross Co., Ohio, communicates the following sensible ideas about preparing it: "It is a wonder that so few should have any thing but field corn for table use; and for drying there is a still greater contrast between the common field and the garden varieties. I have been used for years to drying corn. Boil the green ears a minute or two, just to harden the milk, then cut from the cob and spread on a cloth in the sun for two days, taking it in at night; it will then keep any where. When cooked, it is better to soak it a few hours, and boil in the same water. In cold weather all that is wanted for a week or two may be wet. It cooks quicker and tastes better. A little milk and flour boiled in is almost as good as cream. I have not given up drying corn, but for two years past I have put some down in salt, which gives another variety, and is more quickly prepared. At first I had difficulty in freshening it, and then it was comparatively tasteless, but now I boil the corn in one water a minute or two, turn the water off, add a

few sliced potatoes, boil until they are done, drain off the water, and add cream or butter. We think this preparation tastes more like summer corn than the dried corn does. In salting, I cut the green corn without boiling, and pack it, alternating one pint of corn and a small handful of salt. When the vessel is about full, put on a cover that will fit down to the corn, and place a small weight on it, as it must be kept under the brine which it makes from its own juice. I have for the last two years been canning green corn with tomatoes. I use about one-fourth part corn, cooking the two together. I have never heard of but one case where green corn canned by itself did not spoil, but corn and tomatoes canned together is a perfect success."

Household Ornaments.

A lady subscriber from Missouri sends us the following description of a household ornament, which may be made, as she suggests, of an egg shell, or, better still, of the shell of a cocoanut. "A pretty 'household ornament' is made of an egg shell, by breaking off one end carefully, leaving the opening an inch and a half or two inches in diameter, according to the size of the egg. Protect the edge with a narrow strip of paper put on with gum or glue. Crochet of any bright worsteds an open-work basket, just large enough to hold the prepared egg shell. Put at the edge of the crochet a stiff cord or small wire, and fasten so that the shell may pass in and out when necessary. The cords which will suspend your basket from the center of the top of the window frame. My basket is made of single zephyr worsted, and is finished at the bottom with a little tassel of the same, with two or three threads of scarlet in it. If you choose, put tassels at the ends of the hanging string, and crochet a little ruffle over the strong string round the edge of the basket. I put some rich dirt in my egg shell, and a few kernels of wheat, which grew and freshened our one little room long before there was any thing



CROCHET BASKET.

green out of doors. But now that spring flowers have come I must have a fresh bouquet in it every day." A small two-inch pot, or an egg cup, will answer quite as well as the egg shell, and may be more convenient to those who do not have geese or ducks' eggs. All the grains and grasses look beautifully in these hanging baskets, and trailing plants have a still more pleasing effect.

Delicious Lemon Pie.—Take 3 lemons, grate some of the rind, $1\frac{1}{2}$ pints of milk, 1 cupful of bread crumbs, 4 eggs, $1\frac{1}{2}$ cups of sugar, a little salt. Add the lemon juice last thing, and bake with an under crust.

Do Farmers Eat Enough?

Farmers work hard. Many of them work harder than their horses. A hired man will seldom do it, but a farmer that drives his own team will take occasion to get out a stone, or put a few rails in place that have been blown from the fence, or remove an old stump, or do some one of the score of odd jobs that are always staring him in the face, while his horses are taking a breathing spell. At noon the horses get two hours' rest; but the farmer finds something that calls for his attention. And in the evening, though tired by the labors of the day, there are sundry chores that must be done before he can rest for the night. With morning he is up bright and early, and sees that his horses and other stock are well fed and carefully attended to. But is he in no danger of neglecting himself? If he does nothing but work, and has good digestion, he doubtless gets enough to eat. But a farmer has to think as well as work. He must use his brain as well as his muscles. Nor is this all; the daily cares and anxieties tax his constitution. The work, whether mental or physical, will not hurt him, and he can stand the cares and anxieties—in fact, he who is free from them will not make much of a man. But he must look to his stomach.

One of our country neighbors, a hardy old farmer, came home from the city one cold afternoon and fainted as soon as he got into the house. Why? "It wasn't a very cold day," he said, "and I don't understand it. But the moment I got into the house I knew I was a goner." "Perhaps you had taken a drop too much," we remarked jokingly, for our neighbor is strictly abstemious. "I hadn't tasted bit or drop since I left home. You see I was busy running round—the women want such lots of little contraptions—and thought I wouldn't stop to get dinner." And so he rode home on an empty stomach. As well expect a stove to warm a room without fuel as expect a man to keep warm without food.

The truth is, a farmer nowadays wants the best of food. A professional man tells us he cannot live on the kind of food on which his driver fares sumptuously. But a farmer that is adapting himself to the new order of things is a professional man and a driver too, and if any man in the world needs good food it is the modern American farmer. Does he get it? As a general rule, we think not. A short tinucage, a number of farmers were cleaning out a creek in our neighborhood, and one of them hospitably asked the writer to share his dinner with him. He was a hard-working, intelligent, well-to-do farmer. The dinner he had brought with him to the woods consisted of apple pie, bread and butter, and cookies. There is not much brain and muscle in such a dinner, and the quid of tobacco for dessert could not supply the deficiency.

Now, why should farmers, of all men, have the poorest description of food and the poorest of all cooking? Half the labor the good wife spends in making the apple pie, cookies, doughnuts, and sweetmeats, would furnish a meat soup fit for a king! Sheep have been slaughtered by the thousand and the soup given to the pigs. Can't a farmer afford to have good mutton soup? We have sheep from which the butcher has been picking out the best at \$3 apiece. The pelts are worth \$1.25. Kill one of these sheep every week. Say it costs you \$2. The legs and the shoulders may be roasted and eaten, and are certainly as healthful as pork. The rest, cut up for soup. Do not ask the women to do it. It is a man's work. Cut it up yourself. Save the legs and shoulders, and also a chop or two for breakfast, if desired. Cut up all the other parts of the sheep into mince-meat, bones and all. The finer it is chopped the better. Then put five or six lbs. of this mince-meat into cold water. Let it soak all night. Then let it be brought nearly to the boiling point, in the same water it has soaked in, and keep it cooking on the stove for several hours till all the "goodness" is extracted from the meat. This makes what the cooks call "stock." We have not traced the process further. "Too many cooks spoil the broth," and at this stage of the affair

the man may safely leave it in the hands of his better half. If she has some black turtle beans, or, better still, some Spanish red beans, she will make a soup that is, in the language of an eminent physician, "positively transcendent!" But beans or no beans, with such a "stock" it is hardly possible to make anything that is not highly palatable and nutritious. Recollect we are a man, and it is just possible that there are sundry little bits of flavoring matter that should be added to the soup that we know nothing about, such as carrots, celery, onions, parsley, and tomatoes. The latter, we can testify, greatly improve the flavor of the soup; and they are so easily preserved that no one need be without them at any season of the year. Bean soup made as follows, from the mutton stock above described, is excellent:

After the meat is well boiled, so that all the juices are extracted, turn off the liquor into a large pan or earthen dish, and when it is entirely cold take off all the fat. When you wish to use it for soup, if it is too strong add boiling water. Season with pepper and salt; and then add the beans. The beans should be soaked over night in the water in which they are to be boiled. They require full four hours' boiling, and water must be added as it boils away, or they will burn and become hard. Mash them in the pot as thoroughly as possible, and then pour the meat soup on them. Flavor with celery, herbs, onion, etc., but above all let it be salted enough. Let the soup boil from half an hour to an hour, according to the quantity and how well the stock and the beans have been cooked before.

Preserving Fruit in Bottles.

An esteemed correspondent, who has tried various plans, sends us the following as the one found to be attended with the best success. This, of course, is intended for ordinary bottles with corks. Where some of the many patent jars are used, the sealing process is unnecessary: "Put the fruit in bottles, and add one-eighth of its weight of sugar. Place the bottles, completely filled, in a boiler with a board or other material in the bottom, to prevent the heat breaking them. Fill the boiler with cold water nearly to the top of the bottles, and heat it to boiling. Dip the corks in melted sealing wax and drive them into the bottles. Tie the corks down with wire or twine, and then seal the corked bottles by turning the necks down twice into the melted sealing wax. When sealed, place them again in the boiler, and boil a short time. Put them in a cool place until wanted for use. The necks of the bottles must be heated in water before the corks can be drawn. The first boiling expands and expels most of the air from the bottle, coagulates the albuminous part of the fruit, and retards its fermenting tendencies. The second boiling, after the bottles have been corked and sealed, renders the free oxygen contained in the small quantity of loosened air inert; the oxygen unites under the influence of heat with the organic matter, it is wholly converted into carbonic acid, and cannot act further in causing decomposition. To make the wax to seal the bottles, melt together one pound of resin, four ounces of beeswax, and three ounces of tallow."

Bottled Fruits Again.

"Mrs. H. C. L." writes: "I have heard many say strawberries could not be canned, 'they lost their flavor, cooked to pieces, lost their color,' &c. I have canned the Wilson for three years very successfully in the following manner. They kept their form very well, and nearly all their flavor. To 3 lbs. of carefully stemmed berries, put 1 lb. of sugar; lay them in a bright tin pan in alternate layers, let them remain 6 or 8 hours, then pour the juice off into a preserving kettle, and boil rapidly about 20 minutes. Put the berries in, and cook slowly 10 minutes, then bottle and seal them. For ripe currants, 3 lbs. of stemmed currants to 1 lb. of sugar; put them all together in the kettle and boil until the juice is pretty well out—say 10 minutes; then lift

the fruit out, and let the juice boil 15 or 20 minutes, then drop in the currants and let them remain only long enough to heat them through, and seal. After cooking currants in different ways, I find this the best, as the skin does not become tough, and they float in a thin, jelly-like juice that is delicious."

Sunday Morning Breakfast.

That brown loaf smoking from the oven, and those codfish balls nicely browned amid slices of pig pork, are savory memories that most Yankee boys carry away with them from New England. Unless they marry Yankee girls they are apt to miss these Sunday morning institutions in their new homes. We have never found anything quite equal to them, and for the sake of the multitude of wanderers from the dear old homestead, we give some recipes from grandmother's cook book.

Brown Bread.—Scald 2 quarts of Indian meal, and when cool, add 1 quart of rye meal. Four in warm water enough to make a thick batter. Then add a ½ pint of molasses and a little salt, and one teaspoon of yeast. Butter an iron pan or kettle, pour in the batter, and let it stand until it rises enough to bake. Bake from six to eight hours, in a brick oven. Put it in at any time when it is ready, Saturday P. M., and let it stand until breakfast the next morning. There is a very wide difference of opinion as to which is the best kind of meal, white or yellow. Grandmother always used the yellow meal, and could not abide the white.

Codfish Balls.—Peel the potatoes the night before you wish to make the balls, and put them in clean water. Put the codfish also in water to soak. In the morning boil both, and after picking up the codfish very fine and mashing the potatoes, mix about two-thirds of potato with one-third of fish, and fry the balls with thin slices of nice pork just taken from the brine. The making of the balls from fresh cooked potatoes and fish adds very much to their excellence. When warmed up they are called codfish balls, but are quite another article.

Baked Beans.—Take a quart of Marrow-fat or White Kidney beans. After washing the beans, soak them 24 hours. Parboil them until quite tender; then put in a pan with a pound of fat pork and bake very slowly several hours, or all night.

Philadelphia County Yeast, by Mrs. S. Grate 13 large potatoes, and boil in three pints of water. Boil a handful of hops in two pints of water, and strain; then wash the hops with one pint of hot water, and strain. Then mix the boiled potatoes and hop water together, and stir in one good-sized teaspoonful of salt, and one of brown sugar, and let them cool. Then take of this mixture one pint, and add one pint yeast to it, and let it rise; then pour all together and keep moderately warm for rise. Keep it in a cool place for use. It will keep 3 or 4 weeks. Always keep some of this to make fresh yeast, but other yeast will do, if you have none of this.

Hop Yeast.—By Jane E. Duffie. Into 3 quarts of boiling water put 1 pint of hops tied up in a muslin bag. Add one tablespoonful of salt and boil ½ hour. Then in another vessel, stir a pint of flour into a smooth paste with cold water. Take out the bag of hops and stir the paste into the hop water, which is still over the fire. Let it come to a boil, stirring all the while. When nearly cold, add a pint of old yeast. After 24 hours it is ready for use. A ½ teaspoonful of yeast is enough for a loaf of bread.

Tea Muffins.—(Mrs. M. C. contributes this and the following recipe.) 1 cup of milk, butter size of an egg, 1 tablespoonful of sugar, 2 eggs, 1 teaspoonful of cream of tartar stirred in the flour, ¼ teaspoonful soda in a tablespoonful of hot water, and about 1 pint of flour, or enough to make a batter stiffer than usual for cake. Drop it into well-greased muffin pans or rings, and bake in a hot oven fifteen minutes. First mix the butter, sugar, and eggs together; then add the milk, then flour, and the soda last.

Bransted Pudding.—1 cup of milk (or water), 1 cup of molasses, 1 teaspoonful of soda, 1 teaspoonful of salt, 1 lb. of raisins, flour to make a stiff batter, ½ cup mixed spices. Boil 4 hours. Leave sufficient room in the bag or mold to allow for swelling, as it will be of double the size when boiled, if allowed room to expand. By adding more fruit (such as currants and citron), it makes a most excellent plum pudding.

BOYS & GIRLS' COLUMNS.

A Stone's Talk.

I am older than you. My head is bald and smooth. It was not always so. Once, when I lived in the woods, thick, mossy carls clustered around my brow; but the trees were cut away, the sun shone hot upon me, the moss faded and turned gray, and at last the rain, and hail, and wind, pelted it all off. When your great-great-great grandfather Adam was alive, I was older than he. Old people have seen and heard more than young ones, and so I think I can teach you something, especially if you are a girl. Boys think they know enough without learning from a stone, or even from their father and mother sometimes. It takes them a long time to find out how much knowledge there is in the world, and how little of it is in their heads. When they do this, they begin to be wise. Girls are more wise; they do not think they know much, and so are willing to learn. This is not the case with all girls, neither are all boys "wise in their own conceit"; such children need not think this stone is thrown at them. When a stone is thrown up, why does it come down? Because that is the law. A wise man, Sir Isaac Newton, discovered this law, which he named the "law of gravitation." All the stones in the world had obeyed this law for ages before the philosopher discovered it. No matter how high a stone is sent, even if it be shot from the mouth of a volcano thousands of feet into the air, back it will come to its place on the earth. Men have built tall columns and spires, and raised stones very high, but in a few hundred years most of them have found their way down to the ground: they always obey the laws made for them by their Creator. Do you?

Ways of Getting a Living—II.



TEST YOUR LUNGS, SIR?

Several years ago, when passing along Park Row, near our old office, we heard this question, and looked over the heads of the little crowd collected on the sidewalk, to see what it meant. The picture above shows about what was to be seen. A pleasant-faced, keen-eyed man had an apparatus to measure how much air a person could hold in his lungs. A highly polished brass vessel was inverted in another similar one containing water, and a rubber tube was placed so that a person could blow underneath the inner vessel. As the vessel was filled with air from the lungs, it rose slowly, and a pointer on the side of the outer vessel showed on a scale how many cubic inches of air had been blown into the inner vessel. It was amusing to watch the different persons who tried the apparatus. Our artist has sketched one young man who is a fair sample of a large number that "took a blow," as they called it. He seemed to have more face than brains, and more curiosity than good sense. He blew long and strongly, until his face reddened, and in his earnestness his knees bent under him. But, spite of his utmost efforts, he could not make the pointer reach as high a mark as a broad-shouldered countryman had just done. He would not have tried so hard, perhaps, if he had known a little more about his lungs, and that they would hold only a certain amount of air.

Be Courteous.

A friend of mine took his seat in a car for a journey by railroad. He noticed directly that the occupants of the seat before him were sailors, one a white man, a real "old salt," and the other black. As the seat they occupied was in a front corner of the car, and partly facing my friend, whom I will call the Doctor, he made some off-hand remark that led to conversation with them. He learned that they were just home from a long voyage, and also drew from them some interesting facts concerning it. They were much gratified with the civilities

shown them, which, in fact, amounted to nothing more than treating them as men. Soon the old sailor left his seat and drew out of his pack a beautiful cane of olive-wood. "There," said he, "I brought that from the Mediterranean, and I want you to take it, for it's not often that I find a man that knows how to treat an old salt." The Doctor objected, but at last took it and set it near him. Within a half hour afterward, the sailor was in convulsions. The black man watched over him with the utmost tenderness, saying that he had had such fits before and would come out of it. He did soon recover, and while in the sleep that followed his recovery, my friend's place of destination was reached. He thought of leaving the cane behind, but the black man protested. "I know him well," said he. "I've sailed with him for years. He meant what he said, and he'll feel hurt when he wakes if he finds you have not taken it." The Doctor brought it away. Its chief value to him arises from the fact that the gift was a sincere expression of gratitude for what was esteemed a favor, although I am sure it was but the natural outgoings of my friend's kindly heart; and he cannot but feel glad that he enjoyed and improved an opportunity of brightening another's pathway by a kind word. There are many lives that have little enough of joy in them, and a kind word costs but little. See how many such you can speak, young reader. Always and everywhere, "Be courteous."

UNCLE PAUL.

The Fourth of July.

The good, old-fashioned custom of celebrating Independence Day, we hope will never be given up. We can even bear to hear the impatient snapping of fire-crackers and torpedoes, and the stunning report of artillery, rather than neglect to honor the day that gave birth to our Nation. If such noisy demonstrations are the best you can make, why make them. But we hope for the time when the explosion of powder will be deemed a hateful rather than a joyful sound. "There's a shout of murder in the cannon's boom." Did you every try to make a Fourth of July speech? A boys' and girls' celebration with a procession and meeting, and some young Webster or Clay for an orator, would be interesting, especially if the speaker would talk as he felt, and not merely try to make a grand speech with borrowed words.

Eight years ago a boy contributed a Fourth of July speech he wished to make. We think he must have been a pretty old boy. As more than one hundred thousand new subscribers to the *Agriculturist* received since that time have probably never seen it before, we reprint it here.

"Hurrah for liberty! Three cheers for independence!! Columbia forever!!! I have a small voice, but it is full of my heart, and it shall come to you like an electric spark falling on powder. Who is so dead that his pulse does not beat quicker on this birthday anniversary of the nation? If there be one, find him out, fill his pockets with powder and his hat with gas, tie him to a bundle of rockets, touch him off and send him up to get a new view and an exalted idea of the glorious land he is now unworthy to inhabit. But I leave him to his fate and return to you who do exult as Americans should.

"When the seed breaks forth from its prison in the early year, the spring rejoices, and men are happy at heart; but the fullness of joy comes when the harvest waves over the field. The world rejoiced when, in 1776, our forefathers declared their independence. It was the young growth of Liberty. To-day we are reaping the fruits of that spring-time, and our joy overflows from swelling hearts. This country then was like a farm with here and there a field planted. There were scattered villages, full of life and promise, but few in number, and far between. What a crop has been raised from that small beginning! They had strong roots, those noble men, that fastened to the soil. They were God-fearing, liberty-loving men, and from those roots have sprung the blossoms and the fruit of the intelligence, the prosperity, and the happiness of our day. They had to fight hard, but they were brave because they were good, and fighting in a good cause, and what they won we enjoy.

"I hope the day of fighting with powder and ball has passed, in this country at least, and that we may always use our ammunition in fire crackers and rockets, and big guns, as we do to-day, without hurting any body; but I tell you, my young friends, the world's great battles are not over yet. We've worse enemies to overcome than our forefathers met on Bunker Hill, Saratoga, and Yorktown. Ignorance, selfishness, and vice, are working at the foundations of our prosperity like rats gnawing off the beams of the building that shelters them. Every one of us that grows up uneducated, or a wrong-doer, or selfish, or mean, is cherishing an enemy of his country. Oh! if I could to-day bring out the biggest gun ever made, load it to the muzzle with knowledge and goodness, discharge it into the heads and hearts of these troublemakers of the country, is there a boy that wouldn't give a light, or a girl that wouldn't, if necessary, give me her new dress for wadding? But it can't be done in that way. We must meet these enemies, book in hand, in the school-room; we must shame them out of the land by good examples

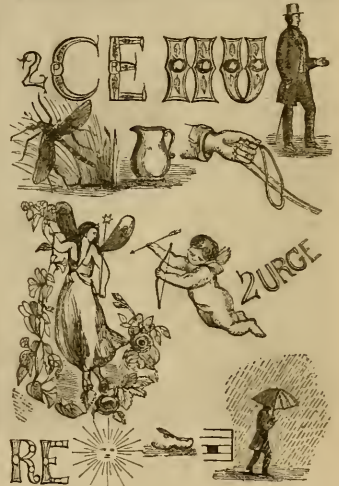
of truth-telling, of generosity and love; we must fight our battles hand to hand in our own lives, by resisting and overcoming every bad habit; and if each will overcome himself, then we will all have a good time together, and all be able to shout *liberty and independence forever!*"

Answers to Problems and Puzzles.

The following are the answers to the puzzles, etc., in the June number, page 222. No. 307. *Illustrated Rebus*.—*Always be grateful for the gifts you possess*. . . . No. 308. *Illustrated Rebus*.—*I would not live always*. . . . No. 309. *Aristological Problem*.—The man who owned the five leaves should receive all the money, and should also receive one-seventh of a dollar from the man who owned the two leaves. . . . The following have sent in answers to puzzles, etc., published in previous numbers. A. F. Curtis, Charles P. Anderson, A. E. Smith, A. B. Leach, Adam Correll, Jr., "Crescent and Star," Sarah Dowland, James Ferguson, Lorin Morrison, J. M. Wheeler, G. A. Arnold, L. W. Wright, Howard Harris, F. Armstrong.

New Puzzles to be Answered.

No. 310. *Metagram*.—This word means a change in a letter. The puzzle is made by describing a word, then changing a letter in the word, and describing the new word, leaving the reader to find out what the words are, by the descriptions given. Thus: A word of four letters surrounds the earth and marks the course of the sun. It also sometimes embraces a lady. Change its first letter, and it will be found in an animal's back, also on a gentleman's coat; sometimes on the dinner table, and frequently in a dispute. Change the first letter again, and it gives a sound, but change the first letter once more, and it can give none. What are the words of this Metagram?

No. 311. *Illustrated Rebus*.—Quotation from a poem.

No. 312. *Mathematical Problem* for the younger pupils. Deposit one cent in a bank, and double the amount deposited for one year—as, one cent the first week, two cents the second week, four cents the third week, and so on for fifty-two weeks. How many farms of three hundred acres each, at seventy-five dollars per acre, could you buy with the money deposited through the year?

No. 313. *Picture Conundrum*.—Why is this unfortunate cat like some of our well-known authors?



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"OUT TOO SOON."—FROM A PAINTING BY J. C. BEARD.—Drawn and Engraved for the American Agriculturist.

Mrs. Croak had three children, Pert, Dodger, and Bright. Their portraits are in the picture above. They lived in a nest which Mr. and Mrs. Croak had built near the top of a tall pine tree, in a lonely wood. Mr. Croak died shortly after his children were born. He lost his life while at a feast, where he eat so much that he could not travel very nimbly, and his enemy found and shot him. Mrs. Croak dressed in black, like a faithful widow, worked hard to rear the children alone, and tried to teach them all she knew, which was not a little. One day when she had flown away to pick up a nice dinner of grubs and corn for her darlings, Pert began to grow uneasy. "I'm tired of always staying here," said he; "let's get out and look around," and he began to hop over the backs of his brothers. "You'll break your neck," said Dodger, as Pert scrambled up on to the edge of the nest. But Pert gave a spring and fluttered his wings as he had seen his mother do, and got safely on to a branch above. "Oh! its splendid here!" he cried, as he looked out over the tops of the trees; and Dodger and Bright seeing he seemed safe, managed to clamber up beside him. Just then Mrs. Croak came swiftly flying home. She was so astonished at seeing them on their high and dangerous perch, that she let their dinner fall from her mouth, and at once gave them a lecture for their disobedience in leaving the nest when she was absent. Pert talked back saucily, and said he thought he was getting big enough to take care of himself. Dodger excused himself by blaming Pert, but Bright listened humbly and promised not to do so any more. I cannot say exactly how it happened, but one day not long after this a boy found a young crow at the foot of the tree, just able to *caw* feebly once or twice, and then it died—and this was the end of naughty Pert. No doubt he lost his life by not minding his mother.

Bright and Dodger must be alive, I think, for there are two very mischievous crows that steal much corn from the fields around the woods where they were born, and the boys say they have never been able to get a shot at either of them. They probably were careful to follow their mother's teachings, and grew to be as wise as she.

What is a Tear?

Mostly water. If some day when you have a "good crying spell" the tears be all saved, and put into the hands of a skillful chemist, he will be able to show you what else they contain. There will be a little of a slimy substance called mucus, a little salt, some soda, phosphate of soda (that is, phosphorus and oxygen united with soda), and phosphate of lime. These substances give the salt taste to tears. If a tear be allowed to fall upon a piece of glass, the water in it will evaporate, and leave the solid parts. When examined through a good microscope, these solid matters will be seen arranged in lines crossing each other, looking somewhat like small fish bones. Tears are extracted from the materials which make up the blood, by a *gland*, which is situated above the eyeball and underneath the upper eyelid, on the side nearest the temple. Six or seven exceedingly small channels flow under the surface of the eyelid, discharging their contents a little above the delicate cartilage which supports the lid. It is these channels or canals that carry the tears into the eye. But tears do not flow only at certain moments and under certain circumstances, as is supposed; their flow is continuous; all day and all night, although less abundantly during sleep, they trickle softly from their slender snices, and spread glistening over the surface of the pupil and the eyeball, giving them a bright

and limpid look which is one of the signs of health. It is the ceaseless movement and the contraction of the eyelids that effect the regular spreading of the tears, and the flow of these has need to be constantly renewed in the way just mentioned, because tears not only evaporate after a few seconds, but also are carried away through two little drains, called "lacrimal ducts," and situated in the corner of the eye near the nose. Strong emotions, especially of sorrow, sometimes cause the flow of tears to be more abundant than can be readily carried away by the ducts; then they overflow the lower eyelid and trickle down the cheek. When you have not very good cause for such abundant tears, it may help to dry them by thinking of the curious arrangement by which they are provided to keep the eye washed clean and in good order.

A Peculiar Taste.—At the dinner given by Professor Gamgee to test the quality of the meat preserved for months by his process, a gentleman was asked his opinion of the meat, after having eaten of it, cooked in various ways. "The mutton is most excellent," was the reply, "but I think," continued he, "that I could detect a peculiar taste in the fowls; the process probably affected the flesh a little." The reader will join in the smile which followed, when informed that the mutton alone had been prepared by Gamgee's process; the fowls had been brought fresh from the market, and had received no treatment, except the roasting, to change their flavor.

The best thing to give to your enemy is forgiveness; to your opponent, tolerance; to a friend, your heart; to your child, a good example; to a father, deference; to your mother, conduct that will make her proud of you; to yourself, respect; to all men, at all times, charity.

(Advertisements on this Page \$2.50 per Line of Space).

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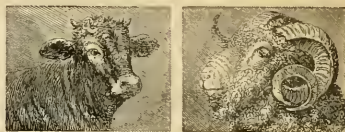
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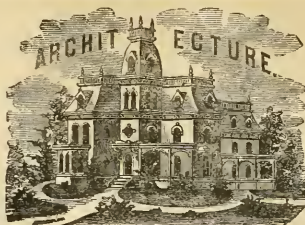
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NEW SERIES—No. 259.



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haps, no better recreation, for the trout is found chiefly in the swiftest brooks, and in rough, mountainous regions, where the scenery is most picturesque. Its favorite haunt is at the foot of a rapid or waterfall, where it watches for its prey. It matters little to the man of culture, whether he returns at evening with a full basket or not. He is something more than a sportsman, and has enjoyed what the basket cannot measure,—the pure air, the mountain scenery, the healthful exercise, and perfect freedom from professional cares. He gains what he seeks,—a

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AMERICAN AGRICULTURIST.

NEW-YORK, AUGUST, 1868.

The meteorological character of this month varies greatly in different years, and the farmer's labors depend much upon the weather. In times of drouth, when pastures are low and when the brooks and ad watering places fail, the stock need constant attention and no little labor. Summer fodder crops will come in use, and are of great value, not only in maintaining a flow of milk, but in keeping dry stock in good condition. Summer fruits may be ready for marketing; spring grains will occupy the farmer's attention. Nevertheless, on the whole, August brings relief to the farmer; his labor is not so hard and usually he can make a few leisure days, if he will, to visit friends or take a trip with his wife to some mountain or sea-side resort, or one of inspection into some interesting agricultural section. It is very agreeable to blend business with pleasure when the business is the most important thing, and this is the only way some men can ever take any recreation,—that is, by making believe it is in the way of business. But it is a great deal better for health and time recreation to drop business, cast loose, and give one's self up to having a real good time, hunting, fishing, sight seeing, visiting, etc., if not in this month, then in September, or during the Fairs, if attending Fairs be not too much like business for most farmers.

Hints about Work.

Harvesting Spring Grains takes place according to the character of the early part of the season, and time of sowing, earlier or later by two or three weeks. It is best to cut wheat, oats, and barley, and especially the last two, while the grain is doughy and soft; the straw in the case of oats is much more valuable to feed, and the grain loses nothing. Barley needs especially rapid curing and protection against rain, for its price depends upon its bright, clean look, and its adhering chaff is very sensitive to moisture and will quickly take a mildew or rusty look. Cut oats when the field appears pretty well yellowed, but before it whitens too much. Always bind oats, if possible, for they take much less room in the barn or stack, and the straw cures and keeps brighter, and is probably better feed.

Buckwheat may be sown south of the latitude of New York up to the 10th of August with a reasonable hope that the frosts will hold off long enough to enable seed to form. Still, the longer sowing is deferred, the more hazardous it is.

Turnips may also be sown early in the month. It is too late to get a crop from any but the common white, although on good soil Rutabagas, or French turnips will produce a crop of nice, little table roots as large as a man's fist or larger, which are excellent for winter use, and when selected of uniform size, sell well. Fill spaces existing in rows of all root crops, and all spots not otherwise occupied, with turnips, either by sowing the seed or transplanting. Tuck in the seed freely.

Root crops generally will need hoeing and thinning. As a rule, don't spare thrifty plants if crowded, but thin them thoroughly, so that when mature the leaves will barely touch. Where spaces are very wide from any cause, two roots may be left nearer than would otherwise be admissible, but it is a poor plan to let them crowd one another. Carrots make their principal growth after the first of August, and need thorough weeding and thinning at this time. If the ground be stirred frequently, they will be much benefited, and it is long before the tops interfere with cultivation or make so dense a shade as not to suffer weeds to grow.

Head crops, other than roots, which include corn, potatoes, sorghum, broom-corn, etc., are or should be beyond tillage with plows, hoes or cultivators. Weeds, however, should be thoroughly pulled, and the ground kept clean, or one great advantage of these crops, namely, ridding the land of weeds, will be in a great measure, if not entirely, lost.

Weeds are plants growing out of place, it is said—and if this is true, an oak tree may be as much a weed as a mullein in a clover field. If we have hot, dry weather, make use of it to cut up weeds, to mow brush, to clear up fence rows, and to clear up bush pastures and such land. All herbaceous plants that have not matured their seed are peculiarly sensitive at this season, and shrubs and trees hardly less so though their roots go deeper. Should these sprout again from the stumps, sheep will browse the shoots, or they may be trodden upon and rubbed off with ease if not too numerous.

Pastures.—Harrow lightly, sow and bush in White clover, Blue grass, and Red top seed, on upland pastures at this season, accompanied by a dressing of plaster and ashes, and if the pasture be an old one, put on two to twenty barrels of bone-dust. An old pasture treated thus will be rejuvenated, if not fed off too close the rest of the season.

Swamps and Drips.—If the season be favorable for ditching in low grounds, lay out the drains and have the men at work every spare half day; get out as much muck and peat as possible as you progress, throwing it out on one side only of the ditch. Even if the weather be wet the ditch will most likely dry the ground in the immediate vicinity, so that the muck can be hauled out as soon as dry. The drying of peaty land may be sometimes facilitated by thrusting smooth poles obliquely into the peaty mass on either side as far as possible, and at a level not much above the bottom of the ditch. Roots, brush, and tussocks of grass or brakes, may be laid up in piles to dry for burning by and by. The ashes will be an excellent dressing for the soil.

Drainage of uplands may proceed at this season if there is opportunity, and it often enables farmers to provide profitable work for their hands during a lull in the pressure of regular farm work.

Grass seed may often be saved in sufficient quantity for one's own use, by observing where any variety grows unmixed and allowing such to become ripe, cutting with a sickle, binding in bundles to be thrashed or rubbed out at leisure. Seeds of many of our best pasture and meadow grasses can only be bought at very high prices, while a little care taken in gathering them would afford an abundant supply for home use, if not for sale.

Manure.—Compost heaps rapidly ferment and become homogeneous in character in hot weather. All sorts of vegetation in its green state is adapted to be used in this way. Swamp grass and brakes, sods, potato tops, and similar substances, are valuable ingredients. Lay them in alternate layers with animal manure, or putting them in thin layers, sprinkle each thoroughly with lime, or ashes. If liquid manure can be pumped over the heaps the advantage will be marked. Muck and peat should be got out and laid up to dry before carting.

Mowing Grass lands at this season or as soon as sown is productive of more good, both to the succeeding crop and to the land, than at any other season. The clover and grass roots are vigorous and strike deep at the time the hay is cut off. A little encouragement at this time keeps them active, the sod will be close, the aftermath strong, and the grass crop next year much improved. Even a dressing of common loam from an adjoining field will often make the difference of half a ton of hay to the acre on grass land beginning to fail, if it be applied in July or August.

Working Stock.—If the working cattle have been properly handled during the early summer, they will be capable of doing much hard labor in August, without sensibly feeling it. It is best, however, to do the severest work in the early morning, heavy plowing or hauling stones, for instance.

Cows should have occasional change of pasture, not only for the good of the grass, but on their own account. If the pastures are short, give a liberal feed of green corn fodder regularly, once, twice, or three times during the day. It is best if wilted.

Cakes and Cuts.—It is usually best to wean calves and colts in August, that is, at four or five months old, if they have been suffered to run with

their dams. This must be done gradually, or there will be a marked falling off in flesh. Make up by feeding a pint or two of oil-meal, beginning gradually with it on ent feed, and as gradually withholding it if you do not desire to continue the feed.

Sheep.—Wean lambs this month or next, in time at least to allow the ewes to get in good condition for wintering. Have a care that the ewes do not suffer from caked bag when the lambs are removed, and examine and milk them if need be for a few days.

Swine.—Where manure is an object it is hardly worth while to begin seriously to fatten hogs before corn is nearly ripe. They may be employed in working over all sorts of manurial substances to excellent advantage. Feed them well; they will work the better and be in good condition to fatten.

Work in the Horticultural Departments.

In these sweltering days of July, at a time when the rush of vegetation after a late spring tempests one to outdoor rather than indoor work, our notes will be rather brief. Two things will claim especial attention of the horticulturist,—packing and forwarding his products to market, and insects. Look over what has been said in previous months.

Orchard and Nursery.

The harvest is already going on with our Southern neighbors, who should recollect that the more distant the market, the more care is required in shipping the fruit. Let them recollect that the fruit in large cities is sold almost entirely by its looks. An important point, which we have often insisted upon, is

Assorting, and to add force to our remarks on this subject we quote from the Proceedings of the Am. Pomological Society, where Dr. Cloggett, a large fruit dealer of St. Louis, said: "I wish I could impress upon fruit growers the importance and profit of assorting their fruit. Fruit will not only bring better prices if assorted, but depreciation of prices will be prevented. Too few shippers assort their fruit. Such as do so, get from one-third to one-half more than those who do not do so. Full one-third of the fruit found in packages had better have been given to the pigs *** If one-third of the fruit sent to market were left at home, the other two-thirds would bring more than the whole does now."

Thinking is a way of assorting on the tree, and we have often advocated this. What is the use of allowing fruit that can never be good for home use, or market, to exhaust the energies of the tree?

Picking does not receive sufficient attention. Fruit should be subjected to sufficient pressure to prevent bruising in transportation. One who sees how fruit packages are handled by the railroad and steamboat hands will not need to be told of this.

Picking should always be done by hand. For this purpose various kinds of ladders should be in readiness to reach all the fruit. In previous volumes we have figured several forms of ladders suited to the orchard. A common ladder may be so stayed with ropes as to answer in the absence of better.

Insects are still to be fought vigorously. Pick up fallen fruit every day and give to the pigs. Later in the season the apples may be used to make vinegar. Red-spider is not now rare on pear trees, and must be fought with soap—soft, whale-oil, or cresylic— and water. This insect only revels in hot and dry weather. Plant-lice are to be treated to the same preparations or to tobacco water. Late broods of Tent and other caterpillars are to be exterminated.

Budding is in order with all stocks upon which the bark will run and where well-developed buds can be obtained. If buds are slow in maturing, pinch off the ends of the twigs intended to be used to supply them. The cherry and plum are the earliest budded; then follow the pear, apple, cherry on mahaleb, peach, and quince. If the tyings on stocks budded earlier are too tight, loosen them.

Weeds.—Keep clear of them. If the ground is not occupied by some crop that will benefit the trees, allow nothing to grow, but keep the soil nice and mellow by frequent use of the cultivator.

Fire-blight has been much discussed as to its cause, but the only treatment yet known is to cut away the diseased parts as soon as discovered.

Black-Knot is to be treated in the same way.

Fruit Garden.

The general treatment of trees in the fruit garden is hinted at under *Orchard*. Market or preserve all fruit not consumed by the family. Some good hints on bottling and otherwise preserving fruit are given in the *Household Department* this month.

Strawberries will have made good runners. Spring and autumn planting each have their advocates. Autumn planting succeeds well in all except northern localities. We saw a fine plantation this spring that was made the last week in November from plants started in pots as noted on page 297. This plan is gaining favor among cultivators and nurserymen; the principal outlay is for small pots in time to strike the runners. One has only to turn the plants out of the pot and is thus almost independent of the season. This plan is of easy execution, and commended to small cultivators.

Strawberries for forcing should be started in small pots, and when well established are to be later in the season transferred to the larger pots in which they are to fruit. *Triomphe de Gand* and *Trollope's Victoria* are among the best sorts for forcing.

Blackberries are to be kept within bounds and made to throw out more bearing shoots by pinching as heretofore directed.

Raspberries.—The best cultivators take out the old canes as soon as the fruit is off, though many leave the pruning until the time for laying down or even until spring. Keep the ground clean by means of the cultivator or hoe, and remove all suckers not needed for canes or for making new plants.

Experiments.—Be it known that all of our cultivated Blackberries, and many of our Raspberries, have been found as wild plants and transferred to the garden. Those who wish to experiment with these, or with the almost uncultivated huckleberry, should mark the wild specimens of which the fruit is of fine quality and transfer them to the garden in autumn. A bit of white rag tied to the stem is not observable while the leaves are on, but readily seen at a distance when the stem is naked.

Grapes.—The general treatment of the vine has been sufficiently given in our series of articles on the subject. One should be among his vines daily, and give them such tying, pinching, and other treatment, as they need. Do not pass by a caterpillar or other injurious insect without destroying it. We have long advocated hand-picking as the surest way of disposing of many insects. The Gardener's Monthly sensibly says: "We have seen instances where people have spent an hour in arranging matters to destroy or drive away insects, by some charmed process, when a half an hour of hand-picking would have destroyed the whole crop."

Dwarf Trees will need to have their fruit thinned, if not already done. Early fruit is to be picked as soon as well developed, and ripened indoors.

Weeds are to be kept entirely out of the fruit garden. Let the soil be clean and mellow wherever there is no mulch. Some hand-pulling of weeds will be needed among the strawberry and other plants.

Mulch and Water are the two helps for newly planted trees which suffer from drouth. Either cover the ground all around the tree with a thick coat of litter, or draw away the earth, give the roots a good soaking, and replace the earth.

Kitchen Garden.

The garden should now be quite clear of weeds and many of the crops have so taken possession of the soil that the labor is very much reduced.

Asparagus.—Keep seedling plants free from weeds, and thin them to get strong, well-developed roots.

Beans of the bush kinds may still be put in to furnish a late crop for stringing or to salt for winter.

Cabbages.—Plants may still be set in the Southern States. If slugs appear, dust lime over the ground.

Carrots and all other root crops are to be thinned if needed, and the soil kept loose between the rows as long as convenient to work them.

Celery may be set out early this month, and make a late crop. Keep the plantings well cultivated.

Corn.—Save the earliest and finest ears for seed.

Cucumbers come on rapidly and the vines should be picked over every day or two for pickles.

Egg Plants.—Forward them by the use of liquid manure, and mulch to keep the soil moist, and prevent the fruit from resting on the ground. Look out for caterpillars, which are very fond of the plants.

Endive.—Transplant a foot apart each way. When the plants are a foot in diameter blanch for use by gathering up the outside leaves and tying them by their tips over the center of the plant, or by laying a board over them. Darkness is what is required. The tying or covering should be done when the plants are dry. Sow seed for a late crop.

Melons.—Removing a portion of the later set fruit will improve the quality of that remaining. Save seed from fine and early specimens which have grown at a good distance from other varieties.

Onions are to be pulled as soon as the tops of a majority of the plants fall over. Dry thoroughly those that are to be stored for winter. They should not be put in large heaps, but spread thinly in a cool and dry place. Take up onion sets and store in a similar place, spread in layers about 4 inches thick.

Radishes.—The early sorts may be sown in vacant places. Winter varieties are to be treated like turnips. Those who are fond of radishes should try the Chinese Rose-colored Winter—the best.

Spinach may be sown for fall cutting; the crop to winter over should be deferred until next month.

Squashes.—Look for insects' eggs on the under sides of the leaves, and crush them. Several ways of destroying insects are given in this and previous numbers. Hand-picking is a great help. If the runners root at the joints, do not disturb them.

Sweet Potatoes.—Keep the soil clean and mellow. At the North the vines should not be allowed to take root at the joints; move them occasionally.

Tomatoes.—If training of any kind is done, keep the vines tied up and in good order. If any worm "droppings" are seen upon the leaves or on the ground, search for the worm. It is the large green worm that infests potatoes and tobacco, and will not only eat leaves and stems but green fruit. Catch and crush. Save seed only from the earliest and best formed, if it is desired to keep the variety in its purity. It often happens that a vine will be more prolific or bear a better fruit than the rest,—indeed be as distinct as many of the "new varieties." Save seed of such specimens for trial.

Turnips.—Sow Ruta-bagas early in the month, and the flat kinds later. Give a dusting of lime as soon as the plants are up, to keep off insects.

Water only when plants are absolutely suffering; with thorough working there is seldom need of it. If liquid manure is used, do not apply it during a time of drouth, but only in a growing time.

Flower Garden and Lawn.

The condition in which the grounds are kept in the month of August is a good indication of the gardener's industry. Some enthusiasts work well while they are rewarded by an abundance of spring flowers, but their zeal abates under the August heat. In this interregnum between the early and late blooming flowers the few that show themselves should be made to look at their best, and neatness and care make up for the lack of floral display.

Beds in the lawn ought always to present a well-defined margin, and no grass or clover should be allowed to run into them. These beds are generally planted in masses and should be kept well weeded, and the soil loose until the plants have covered it. When "foliage plants" are employed they produce a much better effect if trimmed occasionally, so as to keep the center of the mass the highest.

Lawns, to be velvety, need mowing every week. The hand and horse machines now in use allow this

this month, and prices about $\frac{1}{2}$ ¢ lower. Sales, however, have been steady, and the supply has all been taken up. Nothing is selling above 9 cts. per pound, and really good hogs may be had for 8 $\frac{1}{2}$ cts. Prices range from 80 $\frac{1}{2}$ to 8 $\frac{1}{2}$ cts. per pound. Few dressed hogs are in market, and sell for 12 $\frac{1}{2}$ to 14 cts. per pound. The market days in and about N. Y. City are: Communipaw and Hudson City, N. J., on Mondays and Thursdays; at the National Drove Yard, 100th St., on Wednesdays; Hog and Sheep Market, 40th St. and 11th Avenue, Wednesdays and Saturdays.



containing a great variety of Hints, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

How to Remit:—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county seat in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us without any loss.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. Observe, the *Registry fee*, as well as postage, must be paid in stamps at the office where the letter is mailed, or it will be liable to be sent to the Dead Letter Office. *Buy and affix the stamps both for postage and registry, put in the money and seal the letter in the presence of the postmaster, and take his receipt for it.* Letters sent in this way to us are not at risk.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, three cents, each quarter, or twelve cents, yearly, must be pre-paid at the Post-office where the paper is received.

The Weather and the Crops.—The wet season at the East happily let up towards the last of June and farmers profited by several days of intensely hot weather in July. Haying was commenced under favorable auspices and though storms and summer rains followed, we have strong hopes that the season will not be a wet one. The backward corn crop is beginning to pick up on dry land, but a large portion of it may never glaze properly. It is a saying as true as old, however, that July and August make the corn crop. Winter grains, where not winter-killed, are at the time we write filling well, and will come up to the full average. Spring grains, oats particularly, though backward, promise fairly. From what we see and hear we think an unusually large breadth of oats has been sown. The fact that a short corn crop may be reasonably anticipated at the East, and will surely come in case frosts do not hold off longer than usual, should lead farmers to put in as many turnips as they can as a substitute. The reports from the great corn growing sections are decidedly favorable, and farmers expecting a very large crop are already buying heaves in anticipation. Spring wheat does not look well as a rule; winter grain is more promising as it approaches the harvest. High winds, hail storms, and violent rains with sudden changes of temperature, have been quite prevalent in many sections, and there is considerable complaint of badly lodged grass and grain. From Kentucky there come complaints of the mildew damaging the wheat. The Potato bug continues its depredations west of the Mississippi and at certain spots eastward, in which direction it is steadily migrating. Grasshoppers are doing their share of damage also, but so far, apparently not so much as last year.

Unanswered Letters.—Some of the publishers and editors are off for their summer vacation, leaving a reduced office force. This will account for the delay in answering those correspondents whose letters fall into the departments of the absentees.

Sundry Humbugs.—Several correspondents inform us that Hallet, Moore & Co., are still operating on the five per cent plan. The unclaimed prizes of J. R. Hawley & Co.'s prize lottery are for sale by them, at five per cent on the valuation. J. R. Hawley in a reply to a letter says that H. M. & Co. have no authority to act for him, and he knows nothing about them. We say

don't trust either of them with any money.... We have a list of names of firms, not to be found at the numbers given. Among the more prominent ones are: Harper, Wilson & Co., or the "Metropolitan Gift Co.," offering pianos, melodeons, jewelry, etc., are not to be found at the numbers named. The new feature presented by them is a long list of names of persons, who, they say, have drawn prizes. Perhaps by addressing some of these, a reply may be had, but we doubt it. The fact that they are not to be found at the number is enough for us to pronounce them unsafe. Sanford, Frazer & Co., belong to the Kelley tribe of "Kelley's Weekly." They want \$3 to tell what the prize is in the drawing of Kelley & Co., and aid in getting it. They do not appear at the address given. Gumbidge & Co. send out villainous and absurd reading in the shape of pamphlets, and we don't wonder that they are not to be found. Do not confound J. T. Stewart, jewelry and watch lottery, with A. T. Stewart, the merchant. We called at the number of the former, and of course could not find him. Look out for the so-called "Improved French Allotie Watch," Brainard, Le Seur & Co., 41 Broad-st. Their circulars are very presentable and modest, and well calculated to deceive the unwary. We warn all against them, no matter how plausible their advertisements. They, too, are not discoverable at the number given, which is a suspicious circumstance. Vincent, Branch & Co., watches, jewelry, etc., are not to be found at the address named in their circular. Persons of course will be careful not to send money to them for any purpose whatever.... J. Lyon, 174 Hudson-st., is evidently "on the make." What did he pay Westbrook & Co., for all right, title, plates, and the "good will" of the business? At whatever price he got them, he was pretty effectually "sold," for they are well known to be worthless things by a very large class of our readers.... We wish the proprietor of that Drug Store on the Bowery, who has been in the habit of getting "Madams Beach and Putney's" letters, would ask the Madams to send us their book of "Private Instructions." Perhaps we would give both him and them a notice.... Reed & Co. have a new dodge. They propose to those who have drawn prizes and are dissatisfied with their lack, to pay them the full value in money, less 12 per cent. We "can't see it," Mr. Reed. Try again.... D. McDowell, 907 Broadway, is on the Soldiers' and Sailors' Orphan Enterprise. This is also on the per cent plan. He claims to be Secretary for the committee, etc. The prizes run about \$300 each, 5 per cent is \$10, and that is what he is after. This is just now a very popular way of swindling. We have letters of at least six different firms now in operation in this city, all pretending to aid soldiers or sailors, but each taking precious good care that such worthy charities never get one dollar of the thousands that have induced the people to entrust them with. We warn our readers against any and all of them. Don't confound the above D. McDowell with his enterprise with the "National Home for Destitute Widows and Orphans of Soldiers and Sailors, No. 691 Broadway," which has the confidence of honorable people, and is a worthy charity.

The Pennsylvania Ag'l College.—We gave due notice of the reorganization of this college and hopes that it would, from being a disgrace, become a first class institution. A letter received from an officer of the college a few weeks ago informed us that affairs there were "all in a muddle" and now we learn from the daily papers that there has been a general resignation of President and Faculty. What is the matter with this college? Perhaps setting it down in the back woods away from the lines of travel has something to do with its want of success, and probably its failure is not unassociated with incompetence in the management. It looks very much like a case for legislative investigation.

The Illinois State Fair takes place this year at Quincy, Sept. 21st to 26th. Upwards of \$10,000 are offered in premiums, of which \$3,000 are in money. John P. Reynolds, of Springfield, is the Secretary.

Hedge Convention.—Hedges are an institution in the West, the importance of which may be judged by the formation of a Hedge Plant Growers' Convention. Judging from the report, its object is mainly to agree upon the manner of conducting the business of raising hedge plants and selling them. The Secretary and Treasurer is H. N. Pearce, Bloomington, Ill.

Grape Exhibitions.—The importance of grape culture in this country is shown by the existence of several associations composed entirely of grape growers and the announcement of exhibitions devoted to the grape alone. We give the dates of these exhibitions as far as received, and shall probably hear of others. The N. Y. State Grape Growers Association will hold its annual Fair at Canandaigua, Oct. 7th and 8th. G. F. Wilcox, Fairport, is Secretary. The Pleasant Valley Grape Growers Association's annual Fair will be at Hammonds-

port on Sept. 23d, 24th and 25th, and at the same place on Oct. 28th there will be held a critical trial of grapes to test their wine producing qualities. The liberal premiums offered by the Longworth Wine House for the best wine grape for general cultivation will be competed for at the exhibition of the Cincinnati Hort. Soc., Sept. 23d.

The "Orange Judd Wheat Prizes."

\$100 for the best two barrels of white Winter Wheat.
\$100 for the best two barrels of red Winter Wheat.
\$100 for the best two barrels of Spring Wheat.
Attention is called to the fact, that Mr. Orange Judd offers \$300.00 through the N. Y. State Agricultural Society, distributed in three prizes as above shown, for samples of wheat. Open to the U. S. and Canada. See p. 87, March No.

The Wheat Crop.—As we go to press the reports coming in are more and more assuring in regard to the prospect of a wonderful yield of wheat. Much, of course, depends upon the harvest, but an unusual breadth has been sown. It has, on the whole, looked well and done well all the time except over limited areas of pre-viously wet land, which has not been underdrained, and where the grain has been exposed to winter-killing. The harvest, so far as it has progressed, has been successful, and the new wheat in market is good. Spring wheat is improving and earing finely, both East and West.

Peat Analysis.—Two samples of peat from C. P. Williams farm, at Charlestown, R. I., have been analyzed at the Harvard Scientific School with the following results.

	Sample No. 1.	No. 2.
Moisture.....	26.00	26.05
Organic Matter.....	48.00	46.07
Ammonia.....	3.12	3.15
Chloride of Sodium.....	.16	.24
Lime.....	1.48	1.56
Silica, Alumina, Magnesia, Iron, & Loss	20.24	21.85
	100.00	100.00

The analysis shows about six times the amount of ammonia found in common yard manure, and only needs the addition of wood-ashes and bone-dust to make it an exceedingly valuable fertilizer. It is strange that farmers will let such mines of wealth lie unused upon their farms. Mr. W. uses about a thousand loads a year, and is bringing up a run-down farm to a high state of fertility.

The Kentucky State Fair is to be held at Louisville, Sept. 15th to 19th.

The New Hampshire State Fair takes place this year at Manchester, Sept. 15th to 17th.

Turnips Among Corn.—Between the first and tenth of August, turnips may be sowed broadcast among Indian corn. Even if not covered, many seeds will grow; but it is much better to go through the piece rapidly with potato hooks or pronged hoes, breaking the surface uniformly, and pulling all large weeds at the same time. The corn should be cut up at the ground and stacked as soon as glazed, and the turnips will then have two months' occupation of the soil. This will do much towards helping out a short corn crop.

Your Patent.—"S. D. J.," Ohio, sends us specimens of a bent-up wire for supporting plants, says he is negotiating for a patent, and asks our opinion. We think that for many things the contrivance will work well. But why patent it? It is strange that men who are freely using all of the contrivances of those who have preceded them, are unwilling to add to the common stock of knowledge, but the moment they hit upon a simple expedient must go and patent it. If a thing has cost time and inventive thought, we think it should be patented, but when one has something as simple as a bow knot, a mere twist in a wire, we think it folly to patent it. If one has a wire and chooses to twist it up in the way our friend has done, we don't think there are twelve men in the country who, on a jury, would award him damages. This patent business has been, to use a vulgarism, "run into the ground," and unless something like sense can prevail at the patent office, the people will insist upon its abolishment. Persons claiming to hold patents for the simplest contrivances given in the journals are constantly annoying farmers with threats of prosecution. Have a Farmers' Club in every neighborhood; tell these fellows to prosecute, and make a common cause for the defence. Very few suits will ever come to trial when it is found that the game of "bluff" will not work.

Wild Morning Glory.—Our friends write about a troublesome plant under this name, but as they do not send specimens, we do not know which of three plants, which may well bear the name, they mean. One, the Wild Potato Vine, or Man of the Earth, (*Ipomoea*

pandurata), has an enormous root, weighing from 10 to 12 lbs., and is capable of standing a long siege. The Hedge Bindweed, (*Calyptegia sepium*), is much like the common Morning Glory in its flower, but is a perennial; it is very common in low grounds. The Bindweed of Europe, (*Convolvulus arvensis*), is an introduced and small-flowered plant, but one of the most obstinate of weeds. W. H. Parkin, Henry Co., Ill., gives us his method of dealing with the Wild Morning Glory, which would probably apply to the first two sorts mentioned: "The more the ground is stirred, where they are, the more they will spread, and as for choking them it cannot be done here. But they can be got rid of very easily: stock the ground to clover, and turn on cattle or hogs. Cattle and hogs will eat the vines in preference to anything else. Hogs, particularly, are death to the Morning Glory vines. It is a very troublesome weed here, but I have learned by experience that live stock will clean it out."

Willow Peelers.—"N. M. R." Yanceyville, N. C., suggests that in an article on "Willows and Their Uses," in May last, we gave no information about willow peelers. We know that there are patented machines for peeling willows, but we do not know who makes them. With regard to patented articles which no one has a right to make or use without the consent of the patentee, we assume that the thing, if good for anything, will be advertised. It is not the duty of a journal to advertise articles, the exclusive owners of which do not care to bring them properly before the public.

Strawberry for a Name.—"W. M. M." New Brunswick, N. J.—The plant is one of our native strawberries, *Fragaria vesca*, and is also found in Europe. It is the parent of the many Alpine strawberries. It differs from our more common varieties in having the "seeds" (aicles) upon the surface of the fleshy mass which forms the berry, instead of buried in it. There is also a difference in the plant's foliage and habit.

Striped Bug Once More.—This season we have given a long list of proposed remedies. We hear from several that the paper hung from a stick has been perfectly successful. Mr. C. W. Heaton, Fulton Co., Ill., sends us still another method of driving them off; he shakes calomel over the vines from a pepper box. The insects go off humming.—Isn't this classing calomel among the humbugs?

Late Chickens—Bantams.—Chickens must have very good care to get much size if hatched in August. They generally do well but rarely get their full growth, being checked by the cold weather. August and September are the most favorable months for raising bantams. The value and interest of these minute breeds depends upon their littleness, and the same causes operating as in case of other breeds, we get very minute and perfectly formed specimens. This fact it is well for bantam fanciers to remember and profit by.

The Wild Goose Plum.—Messrs. Munson & Wiley, Mauneford, Tenn., send us specimens of the "Wild Goose Plum." It appears to be an improved variety of wild plum, but the specimens failed to reach us in sufficiently good condition to judge of their quality. Messrs. M. and W. say it "ranks among plums as the Concord among grapes and the Wilson among strawberries—the best to be had without great trouble." The tree is said to be healthy and a great regular bearer; the fruit is not attacked by curculio, early, and may be picked green and ripens on its way to market.

Plants Named.—First one word to our friends. It is with pleasure that we name plants for correspondents if they will only give us good materials. We cannot undertake to name plants from a leaf only, nor from small seedlings, neither can we bother with several specimens put together without numbers; if we were to give a list of names, the sender would be no wiser, for he would not know to which plants to apply them, and we cannot afford to describe each one so that he may know. Such things we must pass by. Neither can florists' flowers be named, generally, from dried specimens, i. e., to give the florists' or catalogue name of a rose, or pelargonium, or a verbenia. Leaves and flowers, and if possible, the fruit or seed pod, should be sent. Dried specimens are, as a general thing, more easily determined than those sent fresh. The latter usually reach us in a wilted or a decayed state. Dry the specimen in a large book or between papers, and send it, if small, in an ordinary letter, and if large, between thin postboards... Mrs. A. Bowen, Loomis, Ill. A Syringa, or Mock Orange, *Philadelphus*, but too much broken to tell which. "H. L." Memphis, Tenn. The Chick-Pea, *Cicer Arretinum*, one of the oldest cultivated plants, and was a few years ago

sold at a high price under various names as a substitute for coffee. The separate flower is some kind of mallow; cannot tell which without the leaves... Mrs. M. Treat, N. J. We have not before seen the Elder, and would like to know more about it... "J. E. M." Holyoke, Mass. The Alleghany Vine, *Adumia cincinnosa*, a fine biennial to cultivate... "Subscriber." Martha's Vineyard. Golden Aster, *Chrysopsis foliolata*. "W. C. Gault, Ashland Co., O." The seed of a Puccoon, some species of *Lithospermum*, which one is not to be told from the seed alone... "N. D. W." Waverley Place, N. Y. *Tecoma juncoides*, a favorite plant to train along the rafters of greenhouses and conservatories; requires a light, rich soil... Mrs. M. E., Canandaigua, N. Y. The plant that produces buds on the edges of its leaves is *Brachyphyllum calycinum*. The flowers are purple, and are not likely to be produced when grown as a room plant. It needs bottom heat, and to be kept rather dry to make it flower. Please send another leaf. "T. C. McCalla, Ky. Buffalo-berry, *Shepherdia*, as near as can be told from the leaves... "P. L. C." Dracut, Mass. *Evyonymus Japonicus*, the variegated form; flowers small and greenish, not showy; cultivated for the beauty of its foliage... A number of specimens which require study are omitted.

Loss by Disease Among Animals in the United States.—Professor Gamgee has been carefully looking into this subject and we condense some of his statements in regard to the estimated value of the principal live stock of the country, the percentage of loss by disease during the last year, and the loss in money.

	Value	Loss per cent	Loss in money.
Horses.....	\$743,468,600	6	\$44,608,138
Mules.....	38,545,000	5	1,912,250
Cattle.....	724,075,700	10	72,407,570
Sheep.....	71,931,255	8	5,754,500.40
Swine.....	184,983,965	10	18,498,396.50
Total.....	\$1,893,994,670		\$102,188,295.40

A Brace of Failures.—"McK." Jeffersonville, Ind., writes: "Last year I raised a single plant of the Long-Podded Radish, (*Raphanus caudatus*). It grew about 30 inches high, and produced 15 or 20 pendulous pods, varying in length from 18 to 34 inches. These pods, which were exceedingly tender, pungent, and agreeable to the taste, were of a brownish-purple color, many of them curiously curled or kinked, and all having a general resemblance to rats' tails. From seeds of this specimen I raised, the present season, some twenty plants, which are entirely destitute of merit. They are of vigorous growth, and literally bristle with pods, which, however, do not possess, even remotely, the rat-tailed appearance of their predecessors. They are pale green, stiff, sharply pointed, mostly about 8 inches long, tough, and with very little pungency. Evidently this is the result of crossing with the common radish. I conclude, therefore, that the *Raphanus caudatus* will not preserve its character in gardens where the common radish is cultivated. The Striped Japanese Maize, (*Zea Japonica*), which, as an ornamental plant, with beautifully striped foliage, was much admired last year, has also failed to maintain its reputation. In the specimens now growing in my garden only about one leaf in five is striped. In fact, it has so much deteriorated that, like the *Raphanus caudatus*, I do not regard it as worthy of further cultivation." [We cultivated the Radish in 1890, and when a year or two ago it was lauded as a novelty, gave our experience—which was that it, with us, was a worthless thing. As to the Striped Maize, that depends upon how pure the seed is kept. We have seen it this year with as well marked leaves as when it was first introduced. Eds.]

Wheat Screenings for Chicken Feed.—The screenings of winter wheat, which consists in great part of broken and small grains and may be obtained at most flouring mills, are the best chicken feed we know of. This article is generally worked into inferior qualities of flour, and ought always to be sold or used as chicken feed. It goes further and is much better than corn or meal for young chickens or laying fowls.

Canning Peaches.—"J. W. H." a dealer in preserved fruits in Boston, writes a strong protest against the way in which this fruit is put up for market, and asks us to request our friends in the Middle States to put up none but perfectly ripe fruit. To this we cordially say amen, not only with regard to peaches, but tomatoes and other canned fruit. The public cannot be imposed upon a great while. Canned fruit is just now popular, but if such unripe fruit as was generally put up last year is to be the rule, we shall advise our readers not to touch it, and as far as New York, the great market, is concerned, shall set the Board of Health on the track of the unwholesome stuff. Now, here is a chance for honest men to make a good thing. Let it be understood that a certain label on a can is a guarantee that the contents are just as good as can be, and that brand will in a year or

two run all the trash out of the market. A showy label will sell the fruit, but not to the same customer twice.

Old Postage Stamps.—"Inquirer."—The Government has no use for them. If the "young lady" wishes to collect a million, she can only sell them for waste paper. She is a humbug, and is imitating an English girl who played the same game a few years ago.

Name of a Tree.—E. Marcy, Kendall Co. The tree seeds you collected in N. Y. City were doubtless those of the *Ailanthus*. Some notes on this tree will be found in the *Agriculturist* for May and November, 1897.

Crops in a Young Orchard.—"S. L. G." Jasper, Tenn., asks: "What is the best grass to plant in a young orchard? Is clover or other grass injurious to young trees? If so, what is the best crop to plant in an orchard?" Do not plant any grass or clover in a young orchard. The trees need to grow well until they reach maturity, or the age at which they should bear. Plant such crops as require manure and thorough cultivation, such as Indian corn, potatoes, squashes and all of their family, and root crops. Do all for the trees and take no more from the soil than is returned to it. After the trees have reached the bearing age, clover is the best crop.

Locusts.—"T. W." Xenia, Ill., and "R. L. B." Hooversville, Md., will find the Locust described and figured in Oct., 1896, and we cannot comply with their request to describe it at the present time.

Many-Leaved Clover.—Several have sent us specimens of 4 and 5-leaved clovers, but Mrs. Chas. Morse, of So. Natick, Mass., outdoes all the rest in forwarding 5, 6, and 7-leaved specimens. What is called a 4 or more leaved clover is not properly so. The ordinary clover leaf is regarded as a simple leaf, the blade of which is split up into three parts, and it is no more strange that it should divide into an unusual number of parts than that parsley should become curled, or that certain trees, as the beech, birch, and horse-chestnut, should have cat-leaved or skeleton-leaved varieties.

The College Courant, published weekly at New Haven, is a beautifully printed and well-conducted sheet, which is of great interest to all college students and graduates, especially to those of Yale.

An Early Tomato.—C. T. Crolie, Plainfield, N. J., sent us on June 22d a specimen of ripe tomato, which he thinks is a cross between the French Tree tomato, and the Early Round variety, and claims that it is earlier than Keyes'. Mr. C. does not tell us anything of the treatment of his plants. We could form an opinion of its earliness if we knew when the seed was sown, and the time when the plants were set out. Will friends who send us specimens of tomatoes, or other fruits, tell us all that is necessary to know about them?

Salting Cattle.—"J. A. S." Dutchess Co. There is no doubt of the usefulness of the practice. It increases their consumption of food and water, and their thrift. The better way is to let them have access to salt in their pastures and eat what they like.

Several Thousand Bushels of Corn Cobs.—A. Wilmut, Ill. If the cobs are dry, burn them and save the ashes. They make a tolerable good fuel. Thrown into the barn-yard, or upon the compost heap, they will decay but slowly, and there is a positive excellence about ashes which we "rize very much."

A Good Mangle.—Mrs. J. Thompson, Concord, N. H. Ironing by machinery is not yet an entire success. The most complete mangle we have seen only proposes to assist the landlady in the plainer part of her work. Towels, napkins, sheets, pillow cases, and all plain articles without buttons, are passed between two smooth wooden rollers under a pressure. The work is done very rapidly, and is neat enough to meet the taste of most housekeepers. The article is sold at the house furnishing stores in the cities, for about \$25.00.

Carbolic Acid for Parasites.—S. Flint, Minn. This article, in the form of soap, is a sure and safe destroyer of all vermin upon sheep and cattle. It is for sale at this office, with directions for use—40 cents per lb.; or in boxes, 3 doz. tablets, \$3.00.

Black Cayuga Ducks.—"M. R." Troy. These ducks stand high with breeders. They have a few white feathers about the belly, and grow to a large size.

Relief for Farmers' Wives.—Mrs. C. Dudley, Washington County. The boarding of farm help often comes heavy upon the housekeeper. The best remedy is the building of farm cottages, and the employment of married men for help. A cottage can be put up without any large outlay of money, if there is good timber upon the farm. The laborer, of course, would expect to pay rent, and the investment in the cottage would pay better than bank stock. He would also be a consumer of the products of the farm, and thus furnish a home market. One-half, at least, of his wages would be expended in the supply of his table. Extra hands, by the day or month, could be boarded at the cottage, and this relieve the farmer's kitchen of much of its drudgery.

The New England Fair, with a very attractive programme and list of prizes, takes place at New Haven, Conn., the first week in September. Daniel Needham of Boston is Secretary and business manager.

Tanning Lice.—Franklin Forney, of Somerset Co., Pa., gets rid of lice on cattle and horses by making a strong decoction of white oak bark by long boiling and washing the animals with it twice, three days intervening. He says it is the surest and cheapest remedy he ever tried. We have sometimes recommended a solution of alum, and known of its being used with good success. This is a powerful astringent also, and doubtless acts upon the insects in the same way as oak bark.

Thinning Root Crops.—An obvious truth is often better enforced by a simple engraving than



even by experience. Year after year men cultivate turnips broadcast, using too much seed, and never thinning out the crowded plants. Turnips almost always do much better sown in drills than broadcast, and if "mercilessly thinned" in the rows, so be it the ground is occupied, the difference in the crop is very great. This fact we have endeavored to exhibit, so that he who runs may read, and that he who reads may be reminded to put the truth of the statement to the test.

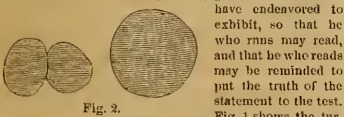


Fig. 1 shows the shape of turnips growing with about the relative amounts of tops and roots upon one alone, and two close together. Figure 2 is a horizontal section, showing still better the great difference between thinned and unthinned roots.

Top-dressing after Mowing.—G. S. G., New Canaan, Conn. Liquid manure applied at this time is particularly valuable. Well-prepared composts, and coarse, strawy manure, we have also used to good advantage, as they afford a mulch for the roots of the grasses. Fresh stable manure we prefer to apply later in the season. Any mulch is valuable upon the fresh mown grass, and the most of it will disappear before the following season, so as not to interfere with the mowing.

Drilling Wheat.—The advantages of this practice are conspicuous in the wheat fields the present season. The report of the Department of Agriculture for April says, that "in every locality where wheat suffered from freezing, the drill fields are unscathed, while those which were sown broadcast are in miserable condition."

Advantage of Thrashing Machines.—J. Stanton Gould estimates the number of these machines in the country at 225,000, and that they save five per cent more of the grain, than the flail. This would save to the country more than 19 millions of bushels of grain, worth at least 30 millions of dollars. A strong argument for the use of improved machinery.

The Work-Shop is the title of an elegantly illustrated monthly, which, for a few months past, has been welcomed to our table. It is the American edition of a German monthly, devoted chiefly to the beautiful and useful art and trade. We Americans are too much given to half-way approving of the sentiment which would divorce beauty and utility. In this journal we have a celebration of their nuptials on every page. Ar-

tistic industry, or "art-industry," by which we understand the application of the rules of art and beauty to all kinds of manufactures, is the sentiment of the work. It is a 16 page quarto in covers, filled with beautiful designs, working patterns, and details. The price is 50 cents per number. Mr. E. Steiger is the N. Y. publisher.

The Minnesota State Fair occurs at Minneapolis, Sept. 29th to Oct. 21. Charles H. Clarke of Minneapolis is Corresponding Secretary and business man.

Milk Farming.—"W. E.," Kent, Ct. We are not able to state the profit of this specially over ordinary husbandry. The long railroad freight would be an objection, but on some roads, they favor those who are farthest from market, to induce farmers to go into the business. It is favorable to the making of manure, for most milk farmers resort to extra feeding in stalls to prolong the season and to secure the largest flow of milk possible from their cows. The pay comes regularly and in considerable sums. An incidental advantage of this kind of farming is that it lends to keeping accounts. The milk farmer is likely to know how much a quart of milk costs, and what kinds of feed will produce the most.

The Potato Beetle.—The Colorado Potato Beetle, the 10-lined Spearman, was figured and described in September, 1893, and has been mentioned several times since. No well-tested remedy has yet been proposed. Mr. C. V. Riley, Missouri State Entomologist, thinks—and his opinion is worth considering—that a heavy mulching of the soil would in a great measure prevent the egress of the insect from the earth in the spring, and the few that do come out could be readily managed; but for this to be of effect, a combined effort is necessary.—*Note.*—Please do not send us any more specimens of this insect. We know it by sight thoroughly. A few days ago we received a package which contained a crushed box with some hundreds of these fellows all alive. Had the paper broken, the insects would have found their way out of the mail bag, and their eastern march would have been more rapid than it now is. If any of these are to be sent East, or elsewhere, let them be first made specimens of by exposing them to the heat of boiling water, which will kill them "very dead."

The New York State Fair is to be held at Rochester, Sept. 25th. An important regulation has been adopted by the Society, which will be put in force this year. It is that all entries for *Live Stock and fixed machinery* must be made two weeks before the fair, namely, on or before Monday, Sept. 14th. The Corresponding Secretary, Col. B. P. Johnson, must be addressed at Albany.

The Ohio State Fair takes place at Toledo on the 21st to 25th days of September. It is under the direction of the Ohio State Board of Agriculture, of which John H. Klippart, Columbus, is Secretary.

The Indiana State Fair is to be held at Indianapolis, beginning Monday, Sept. 28th, and continuing through the week; \$12,000 are offered in prizes. The Secretary is A. J. Holmes of Indianapolis.

What is a Pullet?—"W. H. L." Questions of the age of fowls often arise at the exhibitions and where fowls are sold. An English authority decides that "age does not constitute a pullet," saying that half birds of one year cannot be shown in June of the next year as pullets, yet that January birds may be shown as pullets in December of the same year. This is nonsense; a hen less than a year old may properly be sold or exhibited as a pullet, and in common parlance a hen is a pullet until she has laid out her first clutch of eggs, or had time to do so; and this would stand in law or equity.

Diarrhea in Chickens or other poultry may be checked by putting them on a floor of dry sand, and feeding lettuce leaves, which are better if taken from old plants, chopped fine, and mixed with Cayenne pepper.

Reclaimed Swamps Relapsing.—"I. A.," Livingston, N. J., asks: "What is to be done?" Rushes, and the wild grasses coming in, show the presence of water too near the surface. The drains should be made deeper, and perhaps be doubled in number. Much of the draining in such places is only half done. A second row of tiles, bringing the drains only 24 feet apart, will often pay better than the first. Plowing is not always necessary. Grass seed catches very readily upon mucky soils, especially if the sowing is accompanied by top-dressing. White and red clover do well upon rather moist soils, and should always be mixed with the grass seed, if the object is hay. Reclaimed swamps will not take care of themselves any more than upland meadows.

Sugar Maples Die.—"J. H.," Prairie City, Ill., says that Sugar Maples, when set out, "grow very well the first season, but die the next," and asks how to prevent this. Many such questions go unanswered, because we have no grounds upon which to base a reply. Take this as an example. There is no clue to several important points. Are they nursery trees, or trees from the woods? How were they taken up? Were the tops headed back? From what soil were they removed, and in what kind were they planted? Do the leaves hold on until frost, or do they die before maturity? Do they come out the second spring, or are they apparently winter-killed? One must know all these points, and others, before he can, without seeing the trees, give any intelligent answer to this query and others like it.

Asparagus and Roots.—"C. E. P.," New York.—By all means plow up your soil this fall, and then again in spring. Such a soil as you describe, well manured and thoroughly prepared, should give good results.

Libraries for Farmers' Clubs.—"G. A.," Waukan, Wis. Nothing better could be devised to perpetuate these institutions and increase their usefulness than a well-selected library on agricultural topics. A yearly tax of a dollar on each member would furnish a fund for its gradual increase, and all the best works would be made accessible to the whole community. It could not fail to be a good investment for every member. In any of the flourishing farming towns of the West we should expect the experiment to be successful.

Very Early Potatoes.—Samples of the Early Rose Potato, weighing 4½ oz. each, were exhibited at the *American Agriculturist* Office, July 8th. They were grown in Westchester Co., N. Y., in the open field, from potatoes planted May 30th. We have seen other samples, equally good, grown in from seven to nine weeks, which show this to be the earliest variety known.

Goats in California.—Mr. Landrum, of Watsonville, Cal., informs us that on the spurs and in the mountain valleys of the Coast Range and other mountain chains of the Pacific coast, there exist numerous plants, which, if eaten by our common domestic stock, are very deleterious if not fatal in their effects. These constitute even favorite articles of diet for goats of all kinds, neither proving harmful to them nor imparting flavor to their milk.

Abdominal Tumors in Fowls and Turkeys are not of rare occurrence. They usually arise from some disordered condition of the laying apparatus, and will be eventually fatal. If you perceive a hen or turkey in good condition not moulting, and refusing to lay, and having a low abdomen, cut off her head in time—before she becomes diseased and unfit for food.

Wastes of a Photographic Establishment as Manure.—H. Noss, Staten Island, asks: 1. "Can hypophosphite of soda which has been used for fixing photographs be used as a fertilizer?" We should consider it a fertilizer of moderate value if unmixed with deleterious substances. Mix it with loamy soil or manure, and make an experiment upon cabbages and turnips.—2. "How can liquid ammonia be used? I have some that is too weak to be used in the business." Be very careful, dilute it freely, and apply it with a sprinkler on grass, or almost any garden vegetables. It should be so dilute that you can hardly tell it from pure water.

Canning Peas and Corn.—Once more we must repeat, to reply to several, that we know of no way in which peas and corn can be canned, with any degree of certainty, in families. Those who make a business of it seal them in cans, boil for a while, (in water or steam,) punch a hole in the cans, to let out the steam, solder the holes up, and boil again for several hours. In the most experienced hands the process often fails, and it is regarded by experts as an uncertain business.

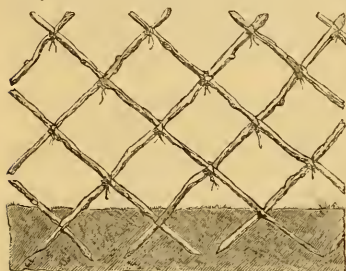
Check for Cribbers.—Mr. J. B. Knox, of Worcester, Mass., has used the hitching rein and rod described on page 139 (April) for several months with the best results, and claims to share the honor of inventing so useful an article with the gentleman whom we named when it was described. If this were a patent worth half a million, there would be a nice chance for a lawsuit.

Hen Killed by Eating Glass.—"Mr. E. W. W.," of Tuckahoe, brought to the office of the *Agriculturist* several pieces of glass taken from the crop of a hen which died suddenly. The glass cut the crop, and no doubt caused her death. It is probable she had been accustomed to picking up ice and snow for drink and made a fatal error in confounding glass and ice.

Missouri State Entomologist.—The State of Missouri has had the good sense to create the office of State Entomologist, and then showed that it knew what it was about by appointing C. V. Riley, Esq., to fill the office. Mr. R. has long been favorably known through his writings in several of the Western agricultural journals, and his course since his appointment shows that he means work. Instead of secretly accumulating a lot of materials for the long-delayed report of some slow-going Society, he gives his matter while it is fresh and in season through the *Missouri* and other Western papers. We hope that our many Missouri readers will aid Mr. Riley by sending him their observations and specimens of such insects as are found injurious to vegetation. His address is 2130 Clarke Avenue, St. Louis.

Strawberry Dr. Nicaise.—Messrs. Frost & Co., Genesee Valley Nurseries, Rochester, N. Y., have sent us specimens of this berry, which we believe they were the first to introduce. The berries, grown from plants set last September, were of remarkable size. One weighed an ounce and a half and measured seven inches around. The fruit being picked under-ripe, on account of the long distance it had to travel, did not enable us to fairly test its quality. The flesh was solid and of good texture. We are not informed of its productiveness, but the specimens sent show that it is an excellent exhibition fruit, and worthy the attention of cultivators.

Another Tomato Trellis.—"F. B." of Newark, N. J., surrounds his garden with a very cheap trellis upon which he trains his tomatoes. The trellis is made of sticks cut from the swamp, set in an inclined position, and where they cross they are tied with a strong twine. When the tomatoes reach the top of the trellis the tops are bent over to the other side and there fastened.



ed. The sticks are completely hidden by the foliage, amongst which the ripe fruit shows with a very pretty effect. A trellis of this kind made of cedar would last many years. The engraving shows how it is constructed.

Fruit in New England.—Very unfavorable accounts come to us from various parts of New England, and the prospect for fruit is anything but promising. The long-continued rains which occurred at the time of blossoming of apples and pears prevented fertilization. Col. Wilder informed us that he should not have more than a third of a crop of pears, and that on July 1st he had not a grape vine in blossom. Many usually hardy vines were killed by the winter, the wood not being well matured. At the Botanical Garden, Cambridge, the Magnolias, etc., bloomed a month behind their usual time.

Fuller in German.—The Small Fruit Cultivator, by A. S. Fuller, has been accepted as a standard work by our fruit growers, and we are pleased to find it has met with so much appreciation in Germany that a translation of it has been brought out in that country. The book is in excellent style, with all the illustrations neatly done in tinted lithograph. The translator is F. Mauner, who is one of the leading small fruit growers in Germany. The work so pleased Jühke, the director of the King's gardens, that he requested to be allowed to write an introduction to present it to the German pomologists. This translation in so handsome a manner is a great compliment to Mr. Fuller, and not only to him but to American horticulturists generally, for all of them have in one way and another helped to bring our knowledge of the small fruits up to its present state. It is pleasing to see that German pomologists are ready to avail themselves of experience, from whatever quarter it may come; their conduct is in marked contrast to those of England, who persistently ignore American horticulture.

Whitlock's Exhibitions.—Mr. Whitlock, besides his "perpetual exhibition" of implements pertaining to horticulture and agriculture, has every Thursday a show of such fruits and flowers as may be in

season. Mr. W. in the spacious halls in the Agriculturist building is able to offer ample room to all exhibitors, and a neatly furnished room for discussions. Our fruit growers and florists have availed themselves of advantages he offers, and the exhibitions have been attractive and the meetings for discussion instructive to those who attend. These weekly exhibitions and meetings are free to all.

Gas-Tar or Asphalt Walks.—In the July *Agriculturist* we mentioned the walks in Central and City Hall Parks as illustrations of the excellence of pavements made with gas-tar and other materials. We have since learned that these walks were made with a patented composition under the Barlow patent, in which other materials are used besides gas-tar. As the report of the controller of Central Park gave no hint that the walks there were made with a patented article, we were led to suppose that they were the old gas-tar and sand walks that have been in use these many years. We know that mere sand or coal ashes and tar make a good walk, but are willing to admit that the patented one is better.

Hill's Lawn Mowing Machine.—A lawn mower of moderate size that could be worked by one person without great exertion has long been wanted. We have tried Hill's machine sufficiently to see that it does the work easily and efficiently. By the use of this machine once a week, a lawn or grass plot can be kept in admirable order with a velvet turf. We hope that the manufacturers will have so great a demand as to allow them to furnish the mowers at a still cheaper rate.

Massachusetts Horticultural Society.—The exhibition of Roses, Strawberries, etc., was held by this Society June 30th and July 1st at their magnificent Hall in Boston. The number of varieties of strawberries was not so great as we expected to see, but those exhibited were of remarkably fine quality. Wilson, Hovey, Jacunda, Triomphe de Gand, Brighton Pine, Agriculturist, Boston Pine, and Scott's seedling, were the principal varieties. Notably well grown specimens of all these varieties were shown. Col. Wilder's seedlings attracted attention; those are referred to elsewhere. Roses were out, like Sophy Squeers' sensibilities, "in full bloom." F. Parkman, author of a work on the rose, gave proof that he could raise roses as well as write about them. H. H. Hunnewell and J. C. Chaffin had collections as fine as they were profuse. Hovey & Co., exhibited beautifully grown specimens of the rarer green-house plants. E. S. Rand, Jr., had a good seedling Azalea, valuable for its late blooming, and garden specimens of the charming Showy Ladies Slipper, *Cypripedium spectabile*. Some most gracefully arranged baskets and vases were upon the tables. Amidst all the display of exotics we were glad to notice a stand of our native wild flowers, with their names, a very pleasing and instructive collection. The exhibition was a success, but one in visiting the Fêtes of the Massachusetts Society sees more than fruits and flowers; he meets the men who by their persistent labor have made this the most prosperous of our horticultural societies. It is good to meet such men as Col. Wilder, Breck, Parkman, Buswell, Brackett, Rand, Hovey, and a host of others eminent in the horticultural world. We wish some of the wealthy men of New York could see how things are done in Boston. They might be shamed into doing something for horticulture in their own city.

White Hellebore for Squash Bugs.—W. B. Waterer, Troy, N. Y., writes that his vines being covered with squash bugs he dusted them with powdered White Hellebore while the dew was on, and has seen nothing of the insects since he made the application, which was some four weeks previous to the date of his letter.

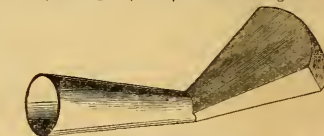
New Jersey State Agricultural Society.—This Society held an Exhibition on June 23d and 24th, at their new grounds at Waverly. Everything about this Society bears the marks of energy and determination to achieve success. The grounds are naturally well adapted to the purpose, and the improvements made and in progress are judicious and substantial. Gen. Halstead, the President, and Mr. P. T. Quinn, were untiring in their exertions to promote the convenience of exhibitors and the comfort of visitors. The fine large tent of the Society was decorated by abundant floral contributions. An excellent show of vegetables was made by B. J. Quinn & Bro., of James Island, S. C., grown upon land heretofore devoted to cotton. Reisig & Hexamer, Westchester Co., N. Y., exhibited over 50 varieties of strawberries. F. Brill, Newark, N. J., took the premium for the best collection of 10 varieties. E. W. Durand, Irvington, N. J., exhibited 7 new seedlings, some of which were of marked excellence. P. W. Schenck, of Irvington, showed specimens of Boyden's No. 30, which attracted general attention for their enor-

mous size and fine appearance. Romeyn's Seedling was well represented by plants in tubs, and the fruit upon plates. We are glad to learn that the exhibition, notwithstanding the rainy weather, proved a pecuniary success.

The Study of Insects.—Doctor A. S. Packard, editor of the *American Naturalist*, has commenced the publication of "A Guide to the Study of Insects," which will be issued in 8 or 10 parts. The first part contains a profusely illustrated account of the anatomy of insects, their transformations, etc., and supplies information upon points in which our few American works on insects are remarkably deficient. Price 50 cents each part, to be had at the office of the *American Agriculturist*.

Propagating New Strawberries.—Mr. Seth Boyden, so well known as a successful grower of some remarkable varieties of strawberries, sends us the following: "The strawberry plant is subject to many variations from external causes, which should be avoided when the highest success is desired. The best varieties will retrograde if they are neglected and choked with weeds, or grown too thick, or in sterile soil, and will become an inferior variety, requiring years of good cultivation to restore them to their original condition. For a new setting the best plants should be selected from healthy parents, with large runners, and carefully handled. An injury to the plant is an injury to the future crops. If the roots are broken or tangled, the plant will never fully recover. The young plants should be set as soon as they have roots sufficient to sustain themselves, and not wait for water before they have become firm in their place. New land or soil not much worn is preferred, and should be trenched a foot deep under the rows and a layer of manure put on the subsoil or bottom of the trench. If the soil is heavy and liable to dry hard, a small quantity of fine manure should be added, and well mixed before the trench is filled. The roots should not come in contact with much strong manure, but after the plants have become firm they may be liberally top-dressed."

A Watering-Pot Sprinkler.—Mr. S. Fisher, Framingham, Mass., sends a drawing of a rose



or sprinkler for a watering pot, which he finds very convenient for directing the jet in any desired direction. The form is sufficiently shown in the annexed engraving.

Michigan Rose.—"W. B. W." This may be propagated by layering shoots of this season's growth.

How to Tell a Pure Brahma Fowl.—John Flegg. A bird which is true to feather may not be of pure blood, as for fowls are not bred with the same accuracy as Short horns, we must always expect to find occasional departures from the marks of absolute perfection in well-bred fowls, and also occasionally grade birds taken so strongly after the prevailing blood that they cannot be recognised. If the stock at six to eight months old is well marked, this would, in our mind, establish the purity of well-marked parents, and nothing else will. Brahma fowls fit to breed from should have small heads, single or triple combs; large, full bodies; broad chests; short, flat backs; large, strong thighs down to the hocks; short and feathered legs; clean feet, with the outside and middle toes well feathered. The plumage may be either white, with a dark penciling of a grayish brown on the neck and back, and dark on the breast and body, or very light. This leads to the distinction between light and dark Brahmas. The dark birds have a light head and black flight and tail feathers. The light Brahmas which are the most common in this country are preëminently white, with the neck hackle and saddle penciled with a distinct dark stripe in each feather. The tail is short, erect, and black, and the wings are short, with the flight feathers black. The body fluff or down is usually white, but occasionally smoke colored, while the feathers are white, and the feathers of the feet and legs are more or less dark also. Long feathers projecting back from the hocks, (called "vulture hocks,") are undesirable, but do not show impurity or bad breeding. Single combs are admissible, but we do not like them. The legs should be yellow, or dusky yellow, and always well feathered. White-necked birds should not be bred from. Neither are those pure enough which have dark feathers scattered about on the body, or anywhere except properly pencilled on the spots indicated above. Early chickens get their true plumage in the autumn, but late ones often do not show their true feathers until six months old.

Savings Banks and Farmers.—"A. N." Lebanon, Ct. "Where shall we get capital to make improvements?" We recently visited a rather poor farming district in your State, and learned that almost every man had a "saw log pile" in the Savings Bank. In the State of New Hampshire, the reports show about fourteen millions of dollars in the Savings institutions, the most of it the spare capital of cultivators. Your State is still richer in capital, and would divide more, *per capita*, than any other State in the Union. These banks are not a fair index of the surplus wealth of the farm, for since the war the favorite investment has been in United States bonds. A farmer who has faith in his business need not go far to find capital to make improvements. There are many small capitalists among farmers always ready to loan, who prefer an indorsed note, or a mortgage on real estate, to any other security. Savings Banks are ready to loan on long terms on similar conditions. There is really no lack of capital to make any improvements upon the farm, that are desirable. We have no doubt that these spare funds invested in draining, in the raw material of manures, in better tools and stock, would pay a larger interest than in banks. Farmers need more faith in their business, rather than more capital.

Canada Thistles.—The Journal of the N. Y. State Ag'l. Society says: "The Illinois Legislature has passed a law providing that any person bringing into the State seed of the Canada thistle, in the packing of goods, grain or grass seeds, or otherwise, and permitting the same to be disseminated and vegetate, shall be liable to a fine of \$400; and any person allowing this thistle to mature and disseminate its seed upon his lands shall be subject to a penalty of \$75." Good for Illinois.

Thills for Horse-Hoes and Cultivators.—"D. F. H.," Ira, Vt. Thills have been introduced to some extent of late, and work well. They give greater steadiness to the implement, so that there is less danger of damaging the crops, and at the ends it is more easily transferred from one row to the other by lifting.

Breeding of Water Fowls in Large Flocks.—"P. J. A.," Cooperstown. There is not the same danger in large flocks, as in the case of hens and turkeys. In a state of nature many varieties breed close together and make their spring and fall flights in large flocks. In Norfolk, England, geese are bred in large numbers. A Mr. Bagshaw, a farmer there, fattened 12,000 for market last year. With a good pond, or running stream of water, there is not much danger of overstocking. It will not pay to breed them in pens.

How Much Pork a Day?—"S. B. D.," Fremont, O. A pig put up to fatten and well fed, that does not gain one pound or more a day is not making a profitable use of his provender. A pig nine months old, and kept three months in the pen, ought to weigh 300 lbs. Some do much better than this. D. Edwards, of Little Genesee, N. Y., fed two Chester White pigs, which gained 236 lbs. in 83 days. They were fed on cooked corn meal, whey, sour milk, and clover, and returned 11½ ounces of flesh for 1 lb. of meal, not reckoning the other food.

Sheffield Scientific School of Yale College.—This school received the U. S. Agricultural Land Scrip. The Annual Report made to the Legislature has been received. The school is making progress in all departments, and offers an opportunity for the study of the sciences bearing upon agriculture and of theoretical agriculture which cannot be excelled on this side of the Atlantic. The fall term this year begins Sept. 16th. There are 125 students in all departments and 21 professors and other instructors with abundant facilities.

A Curious Sheep Story.—The following we clip from the N. Y. Evening Mail, thinking our readers will appreciate a bit of nonsense this wet weather. The remarks by the Mail will be best appreciated if they are read aloud. "Robert Batchelder, of Salisbury, has a flock of twenty-eight sheep, which during the winter were housed in a place where their wool became filled with hay seed. They have been out to pasture for several weeks past, and the excessive wet weather has caused the seed to sprout, and they are now bearing about with them a crop of grass two inches in length. It is thought that if the wet weather continues much longer the clover will blossom."—*Monitor.*—REMARKS BY THE MAIL.—This is the most interesting story that ever we have seen, concerning some New Hampshire sheep who are wearing of the green. They were tracked by a person on whose honor we rely, he never laked off cherry trees, and shouldn't tell a lie. Robert Batchelder, this was the shepherd's name, and he pastured twenty-eight sheep on Salisbury plain. But when the leaves had fallen, and November

winds were chill, why, out on the open world they couldn't get their fill, so Bobby kindly put them in a well protected shed, with hay enough to feed them, in the mow up over head. And the seed it sifted down and it lodged in their wool, and there it did remain, till the April moon was full. And then out went the matrons, all in the rain, you know, and, in less than twenty-one days, the seed began to grow; and it grew, and it grew like the bean in fairy song, and now the grass upon their backs is more than two inches long. And, it is expected, that, later in the year, red, fragrant clover blossoms will appear! The moral of this sheep tale is clear to every eye, that by judicious management, if a person cared to try, he might, with little trouble, and with aid of rainy weather, have his lamb and green peas growing up together.

When to Shut up Pigs for Fattening.—"L. O." Morristown, N. J. If the pens are furnished with shelter and with water, we should say begin in August. A pound of pork is made much more economically in warm weather than in cold. Little food is wasted in keeping up the animal heat, and many green articles are available which are out of season late in the fall. Swine enjoy fresh clover fed every day with their cooked corn or provender. Sweet corn ought to be raised for the purpose of feeding in the green state to swine. It greatly promotes their thrift, and, we have thought, makes flesh as economically as any food that can be given.

Swarming—Artificial or Natural?—"Wm. W. Cary" writes: "I am often asked 'Do you practice natural or artificial swarming?' A direct answer to this question would not show the best course for you to practice, unless all the circumstances are similar. If your apiary is large enough to occupy your whole time profitably during the swarming season, then natural swarming may be recommended, but for one who has only a few stocks, it will not pay to watch for swarms to issue. Some, whether their apiaries be large or small, have occasionally to be from home for a day or two, and such have a constant feeling of anxiety that swarms will be lost during their absence. Thus, it becomes important to study and practice artificial swarming. It can be done in the old-fashioned box hive, but with greater facility and certainty of success if the movable comb hive be used, and easier with shallow frames than deep ones."

Bees in August.—By Wm. W. Cary. —Remove all surplus honey as soon as sealed. Examine carefully all old stocks that have swarmed, to determine if they have a fertile queen. Where many hives are in a row, young queens are sometimes lost in returning to the hive. Such have not the means to rear a queen, and must be either supplied with eggs, sealed queen cells, or a queen, to avoid total loss by rapid depopulation and robbery. Keep a few queen-raising "nuclei" for such cases, and to provide a stock of queens to take the place of superannated ones or of those known to be drone layers.

The Best Cross for Mutton.—"L. D.," Litchfield, Ct. All the thorough-bred sheep are quite too dear in price to be raised for the butcher. The fine-wools generally are small, and would not pay for this purpose. The long-wools furnish quite too much fat in proportion to the lean to be profitable for the consumer. The South Downs furnish an abundance of fine-grained, lean meat, and are only defective in size. If we cross the common Merino ewes of the country, (which are a mixture of "native," Saxony and Spanish Merinos, with South Down rams, we obtain a favorite class of lambs for the New York, and we presume all Eastern markets; they are hardy, mature quickly, and show strongly the South Down points. If we cross South Down ewes, or these grades, with a Cotswold or Leicester ram, we shall increase the size, secure a more rapid growth, with flesh of excellent flavor. If the object be to furnish early lambs for the butcher, this is perhaps as good a cross as could be made. The very high prices paid for lambs in May and June make it very desirable for farmers to have a good stock on hand. A lamb four months old is often worth more than a yearling. The crosses we have indicated are highly prized by the mutton producers who supply the market at Norwich, England, where, upon an average, six to eight thousand yearlings are sold every week.

Timely Hints About Thrashing, etc.

Thrashing Grain.—"The best of men are none the worse for a little watching." This is true of that important class of men "the thrashers." The work is generally done by the bushel. In New York the old price was 3 cents for oats, 4 cents for barley, and 5 cents for wheat. Last year, owing to the anxiety of farmers to thrash early, under the idea that the price of wheat would decline, six and seven cents a bushel was paid.

Of course the thrashers are desirous of doing the work as rapidly as possible, and this is very well, especially as the farmer has to furnish six horses and half a dozen or so of men, besides the four horses and four men that accompany the machine; but owing to their anxiety to "hurry up" it is well to see that the grain is all thrashed out of the straw, and also that it is separated from the chaff, and not carried on to the stack by the straw carrier. The "boss thrasher" is generally a "gentleman of leisure," who "sees that everything is right." Would it not be well if the farmer himself, instead of working harder than any of the other men, should hire an extra hand and merely look after things? High as wages are, one bushel of wheat saved would pay for a man that could cut bands or throw sheaves from the bay nearly, if not quite, as fast and as well as himself. Of all days in the year thrashing day is the time for the farmer to see that everything is done as it should be. This is work enough for one man, which should be the farmer.

Stacking Straw.—It is rare to see a properly built straw stack. If the straw is designed for simply treading into "so-called manure," it is often left after the machine is gone in a shape admirably adapted for the purpose. But nice, bright straw, especially if the grain is cut before it is dead ripe, is very readily eaten by stock in the winter and is certainly worth preserving for the purpose. Any man of ordinary skill can build a straw stack. The main point is to get good-sized forks to place compactly round the outside, and another series of similar forks to put inside and partly on top of it to bind the outside tier. Tread firmly and keep the middle well filled. It is better to arrange to put all the straw in one large stack, rather than in two or three small ones, and it is better to have it a little too high than too wide with a flat roof. It may take an extra man to make the high roof, but it will pay. Another point to be specially attended to is to throw the chaff into the middle of the stack, or at least not to leave it in a heap where it drops from the carrier. The weak spot in the stack, and where the rain is almost sure to do the most damage, is on the side next the carrier. Special care should be taken to get the chaff and short straw away and to build up around the carrier with long straw. Two men on the stack, for a ten horse machine, is enough at first, but as the stack gets higher three will be needed. Better put on four, even, than have a poor stack. But it is not necessary. Let the farmer lead a helping hand on the stack occasionally, if necessary, and see that all is going on right. If thrashing out of doors, see that the chaff and fine straw which fall on the ground are thrown on to the carrier. Do not let it accumulate, for if the man gets behind he will be apt to throw up grain also. The farmer had better watch these things than work steadily himself. Let the stack be finished off at once. If this is neglected at the time it will seldom be done afterwards. Every bit of straw should be on the stack before the machine stops. And then make some sheaves by drawing out straw from the sides of the stack, and fill up the hole where the man stood on the roof and make the whole roof so that it will shed water. We advise, as the result of our own experience, that this be done at once and the stack finished off as though you were sure of a heavy rain before morning.

Thrashing Wheat as Drawn from the Field.—Where it can be done, this is unquestionably the best and most economical plan. If portable steam engines were as common as they will be in a few years there would be no difficulty in thrashing as drawn from the field. Two extra men is all that is needed. But we now require two extra teams also, and these are not always to be had. One man can pitch as fast as any ten-horse machine can thrash. Our plan has been to have three wagons and two teams, with one man to each wagon, who loads and unloads. We built a small stack by the side of the machine, holding perhaps a load, on which the man stands who cuts the bands. While changing wagons, sheaves are taken from the stack, so as not to stop the machine. Let the farmer give up all idea of doing any regular work himself, and attend to the changing of the wagons and furnishing the sheaves, and there will be no trouble. Put a steady man in the field to pitch, and a load will always be ready to take the place of the empty wagon. There are men enough around the machine to run the empty wagon out of the way, and the other is in its place and the man throwing off sheaves in less than two minutes. There is a little excitement about it, when everything goes right, that stimulates activity. With favorable weather and on a large farm we would never thrash wheat in any other way. Where there is sufficient barn room, thrash out of doors and put the straw in the barn. It is then safe, and can be fed more conveniently and with less waste than from the stack.

The Outside Horse on a Sweep Power has to walk much faster than the inside horse, and consequently should have a longer half of the wheel.

tree. On a ten-foot sweep the outside horse walks 60 feet each time round, while the inside horse, two feet nearer the center, walks only 58 feet. In other words, the outside horse walks one fourth faster than the inside horse. He walks 5 miles while the other walks 4 miles. To ask him to draw as heavy a load is cruel. On an ordinary 4-foot evenner a new hole should be bored from 4 to 5 inches nearer the center for the inside horse. With a short whiffletree, say 30 inches from the center hole to the outside hole, the hole should be bored for the inside horse 16 inches from the center. Threshing is hard work for horses at best, and this matter should be attended to. The thrashers give the inside horse of their teams a shorter half of the whiffletree, but three-fourths of the farmers let their horses draw on the machine with ordinary plow whiffletrees without alterations. For the sake of the poor horses we ask attention to this matter.

Guard Against Splitting.—Ferrules or rings of iron are useful things, but among a score of old ones it will be a rare chance to find one that will fit where one wants it; besides, they are not applicable to angular sticks. "J. H. M." gives us a sample of a simple protection against splitting, which we think may find a wide application in our own hands, and on the farms of our readers. Figure 1 represents the end of a stick like a whiffletree, protected by a simple iron wire, applied thus: A groove is cut in which the wire may lie, as it

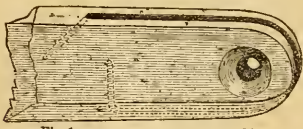


FIG. 1.—GUARD AGAINST SPLITTING.

turns over the end; one end of the wire is bent at right angles and driven into the stick, a hole being bored if necessary. The wire is then laid round in the groove, cut of the length needed, the end bent at an angle of 45 degrees, sharpened, and driven in with drawing blows, so as to tighten the wire as much as possible. The end of a stick with a hole in it, as represented, will bear quite a strain before it splits or breaks. Our correspondent



FIG. 2.—WIRE APPLIED TO A LATCH.

accomplishes this suggestion with a simple latch, Fig. 2, for a gate or barn door, the catch of which is made of a knot—a guarantee against its splitting off, and a capital idea of frequent application. The dotted lines in Fig. 1 show the course of the wire where not really in sight, and the same may be observed on a small scale in Fig. 2.

Gas Tar for Paint.—"C. G. F." Benington, Va. It is used in many places for cheap fences not bordering the highway. There is no doubt about its antiseptic qualities, and it is always cheap near the place of manufacture. Beauty is not its strong point.

Harvesting Field Beans.—Take five rows at a time. Commence on the middle row; pull up as many hills as can conveniently be held in the hands, and then place the handful, with the roots up, on the row. Then pull the two rows on each side, and place the handful round the first on the middle row. Pull a few paces ahead of the heap and bring the handfuls back. Then proceed as before. Sometimes the beans are put in a continuous windrow. The work is usually done by boys, and if the crop is clean, a boy will pull half an acre a day. The heaps or windrows should be moved or turned every day or two; and if the weather is bad, the crop must be carefully watched, and every opportunity seized to turn the heaps and get them lightened up. A little neglect may spoil the crop, or at least render hand-picking necessary. Ordinarily there is little difficulty in curing beans in this way, provided they are not neglected. When sufficiently cured they are thrown into heaps of convenient size for pitching. If the beans are dry and hard, and the vines perfectly cured, they can be mowed away like hay or grain; but if a little green, it is better to put them on poles laid across the beans in the barn, where the air can circulate through them. Careful bean growers frequently stick short stakes in the field, and place the beans around them, that the heap with straw, and let them remain, if need be, for several weeks. When this method is adopted, the beans can be pulled while the vines are quite green, as the half-matured beans will ripen from the sap in the pods and vines. By this method, too, there is little loss of leaves, and these, with the pods, constitute the most valuable portion for fodder.

Going into Wells.—As a rule, never descend into a well without first lowering down a candle or lamp to be sure that it does not contain foul air. Wells in barn-yards that are used in winter for stock, and seldom used in summer, are very liable to be foul at this season. While the springs are low in August or September, is a good time to clean them out, but let no one go down without using the above precaution. The "foul air" is carbonic acid, and no one can live in it an instant. If a candle or lamp will burn freely there is no danger. The carbonic acid is heavier than common air, and accumulates at the bottom of the well. The candle will go out as soon as it strikes the carbonic acid, and thus show how much there is in the well. To get it out is not difficult, provided there is water in the well. All that is needed is to pump out the water and dash it in again. The water will absorb an equal volume of carbonic acid, and the agitation will mix sufficient air with it to allow combustion to proceed, and if a bundle of straw is ignited and lowered into the well, the heat will cause the foul air to ascend. We have succeeded in getting out the carbonic acid from a well simply by dropping bunches of burning straw into it. The blaze would at first be extinguished when it struck the carbonic acid, but the heat is more or less retained, and sets the air in motion.

Michigan Board of Agriculture.

By Sanford Howard, 1867. This is the Sixth Annual report of this body, and besides the usual tabular accounts, and reports of the County Societies, it contains carefully prepared essays upon the management of Agricultural Societies, Irrigation, Cheese Factories, Cross Breeding of Sheep, Principles of Hay Making, Influence of Forests, Diseases of Cattle, and other matters of interest to the general reader. Strong ground is taken against the perversion of agricultural fairs by the horse jockeys. It claims for the New York State Agricultural Society that it has from the beginning steadily refused to tolerate any of these gambling or clap-trap affairs, and yet has had a larger share of public patronage than the Societies that have relied upon trials of speed to draw the people.

Dairy-maids.

—Mrs. S. Thompson, L. I. It is not difficult to find servants who are somewhat unacquainted with the management of milk, and who, with a little instruction in our American methods, make good dairy-maids. We have had quite good success with men-servants just arrived, and rather prefer to have their first training in this country. It is harder to get good maid-servants among the "greenhorns," and if they have skill enough to make good butter and cheese, you will of course have to pay more for them than for ordinary servants. The labor market is well supplied, and the offer of good wages will ordinarily procure what you want.

Weight of Cotswold and Leicester Sheep.

—"J. S." Kinderhook. We recently saw a notice of a lot of yearling rams raised in Canada, that averaged 276 lbs.; of two year olds, that averaged 341 lbs. live weight. These breeds must have rich pastures in summer and generous feed in winter.

A Grazing Country.

—A. Beckman, Putnam County. The whole Allegheny region extending through Virginia into East Tennessee, and the west part of the Carolinas, and Georgia, is a fine grazing country. Red and white clover and the fine grasses of the north will flourish in this region, and it is generally healthy—probably quite as much so as any part of the northern States. Slaves have always been few, and public sentiment is more friendly to northern people than in the cotton growing districts. Many have bought in this region, in fattening them for market. It is much nearer than the prairies of Illinois, whence a large part of the supplies of New York city are drawn. Southern Missouri is also a very fine grazing region, and is fast filling up.

Abortion Among Cows.

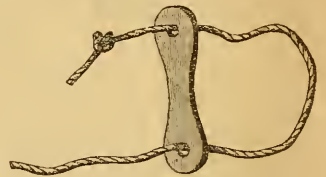
—J. Bonner, Monroe Co., Pa. The Commission appointed by the State of New York to examine into the cause of this disease do not venture upon an opinion. They have visited 1,577 farms, and received 4,259 reports from the districts afflicted, and yet, in the opinion of the best medical talent the State can command, the cause of the trouble is "undiscovered." Editors may be a little modest after this.

Glazed Tile for the Outlet of Drains.

—"G. F. H." Taunton, Mass. The crumbling of the common brick tile at the outlet of drains, of which you speak, is not uncommon. It is generally owing to the laying of badly burnt tile, by inexperienced workmen. Where the brick tile discharge into an open drain, they are much exposed to the frost in winter, especially

if it is a dry season, and the flow of water is not constant. It would be better to furnish all these outlets with three or four lengths of the vitrified pipe used for sick drains.

Catching and Holding Hogs.—"T. E." of Carroll Co., Ill., sends us a drawing of a device for holding hogs while "tanning" them. It is an oak board, cut so as to form a substantial ring, with two handles on opposite sides. This is to be put over the hog's nose while the snout is operated upon. We can show



him a "trick" worth two of that. Take a piece of three-quarter inch oak board, plane it smooth, and cut out a piece like the one shown in the engraving, which should be about five inches long. Bore holes in the ends, four inches from center to center. They must be big enough for a stout cord to run easily in. Pass such a cord through as shown, and make a knot at one end that cannot draw through. Throw down a little corn and lay the hog thus formed round it; then when the hog comes up to eat, pull, and catch him back of the tusks. Pass the free end of the rope through a hole in the fence post, and pull the animal up to it. He will be held firmly and you may operate at your leisure. The chief use of the piece of board is to enable you to cast the animal loose instantly.

Refrigerators for the Farm-house.

—"D. N. G." White Plains.—They will pay for their cost every season and are a very great luxury, especially if you have an ice pitcher for drinking-water. A good refrigerator can be bought for from \$10 to \$20, but you can make one for half the price that will last a dozen years or more. All the material wanted is a few pine boards, nails, a pair of bits, and some saw-dust or charcoal. A good refrigerator is simply a box within a box, the walls about 4 inches apart, and the space filled with some non-conductor. A few pounds of ice daily will keep all meats, vegetables, and fruits in the best condition, and give you cold water to drink besides.

Women Farmers.

—Mrs. T. L. Lord. It may be true that women have not all the facilities for a practical agricultural education that men have. But they are getting bravely over these disabilities, at least in the West. The Iowa Agricultural College, just organized, admits young women to all its privileges. All the other colleges in that State, including the University, have a similar provision. The Kansas Agricultural College also admits women. There are not a few instances of women, left widows, who have taken their husbands' farms, and managed them with signal success. It would be fair to state also, that other women, in similar circumstances, have quite as signally failed. Some women, as well as some men, have a decided tact for business, and would manage anything well. If such affect farming, there is nothing in public sentiment, either East or West, to forbid their success. The best cultivators of the other sex do not necessarily handle the hoe or guide the plow.

When to Cut Timber.

—"Subscriber," Unioctown, Pa. In the spring the trees are full of watery sap, as is well known by common observation. Maple sap flows freely in March and April; grape vines bleed if cut until the foliage comes out. Apple trees bleed if pruned in April or before the blossoms fall. After while the sap of most trees becomes inspissated or thickened, containing less water, and the bleeding does not occur. If timber be cut early, it is clear that it must contain considerable water, and when the water dries out of it, it will be left porous; and if it be cut later, when the sap is thick, it will be less porous. Throughout the season the sap is continually depositing matter in the wood, as well as in the more obviously growing parts of the tree, and this matter still further fills the pores, towards the close of the growing season, so that the wood is much more solid in the autumn than in the spring. A portion of the materials which fill the pores of the wood in the course of the winter is rendered soluble, and is dissolved by the sap when the new flow commences in the spring. Hence on general principles, it is best to cut wood in the autumn, for building purposes or for fencing. The differences in kind of timber, location, etc., with the inaccuracy of "practical" men as observers, give rise to different views, but it takes out-and-out proof to convince us that the view based on the best reason is not the best view.

Horses of All Work—The Percheron.

Real work-horses can hardly be said to be abundant in the United States. We have horses which do a great deal of hard work, but, not being made for it and adapted to it, they suffer under what should be light labor for them.

In the great cities, where they are an absolute necessity, we find fine specimens of heavy draft horses. There are a few districts whence a small number of good to large-sized horses are annually drawn, adapted to hard labor. A smaller race of real workers comes from Canada—admirable horses, of pony size and build, heavy for their size, strong for their weight, enduring as strong, kind, intelligent, tough, willing, good limbed, hard hoofed, profusely clothed with a full furry coat, and an abundant mane and tail. This is the "Kanuck," or French Canadian, whose progenitors came from Normandy. The true Norman horse is a larger and heavier animal, of somewhat similar style; but here, climate, food, and careless breeding, have, no doubt, wrought the change we see. The Kanuck, good as he is for work, can never be regarded as "of all work," for certainly the size of the breed precludes its being used for heavy draft.

Our people have become familiar with that grand race of French draft horses through the pictures of the most gifted of horse painters, Rosa Bonheur, and the engravings of them. Travellers see and wonder at horses, of ordinary size, measured by hands, in the streets of Paris, a pair of which will take a heavy omnibus, crowded with passengers, and trot off with it with apparently untiring ease, as if rejoicing in an opportunity to exert their great strength. A friend assures us, he saw last season, in France, a pair of Percheron horses trot a mile in a few seconds more than four minutes and a half, drawing an omnibus with twelve adult passengers. These horses come from the ancient districts of Perche, Britany, Normandy, and the country immediately adjacent. The Percherons have been most carefully bred, and probably originally were of the best blood. Without a doubt, the

breed originated during and after the time of the crusades, by crossing Arabian and Turkish and Andalusian stallions with the heavy Norman mares, and the value of the horses of different districts, it is said, clearly indicates at the present day, where the most free use was made of this Oriental blood. This is the stock from

this work, of a stallion and a mare, both the property of Mr. W. T. Walters, of Baltimore.

The stallion "*Hercules*," (fig. 1,) bred by M. Bigot, of Meniere, is a dapple gray, over 16½ hands high, and four years old. He is of the heavy-draft class of Percherons, of good form, fine, precise, and quick action, and good style.

His sire is "Monitor," and his dam has won several prizes as a breeding mare, and considerable celebrity as a trotter at the Perche races. We are glad to learn that his owner has resolved to wait his full maturity, before putting him to service. The mare "*Alene*," (fig. 2,) is a model of the Percheron Post or Omnibus horse. She is 15½ hands high, of a dapple gray color, of stylish and rapid action, and has considerable speed as a trotter. These horses, as indeed all of their race, that have come to this country, so far as we know, have been injured to labor from

the age of two years, and are in consequence thoroughly kind and manageable in harness. Most of the horse breeders in this country, who have aimed at making a reputation for themselves or their studs, have raised either thoroughbred race-horses, or bred simply for speed as trotters. If the stock failed of distinction on the turf, they made useful saddle beasts,

or pleasant, fast-trotting light carriage or business horses. They are not bred for labor, and have not the strength, endurance, nor temper for it. The Conestoga horse of the Pennsylvania Germans is adapted to heavy draft, and to that only. He is a work-horse indeed, but as far from being a horse of all work as possible. The walk is his natural gait, and, though there are exceptions, a trot seems as if it would shake him all to pieces. This is not such a draft-breed as we want. Its crosses with thoroughbreds make

fine, stylish heavy horses, but not hardly, and apt to be vicious; those with the Morgans, Canadians, and other light, cold-blooded breeds are not uniformly well proportioned, and give disappointment. The recent importations of Percherons, and the interest manifested in this wonderful breed of "all-work" horses, bids fair to make before long a great change in the charac-

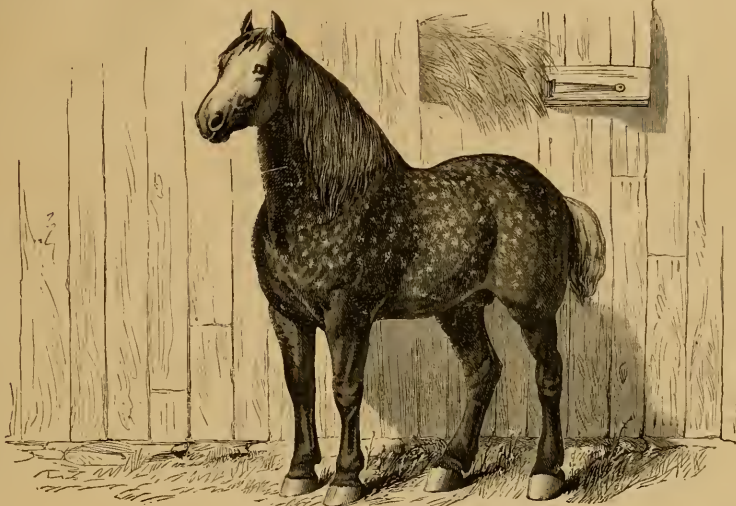


Fig. 1.—IMPORTED PERCHERON STALLION "HERCULES," AT FOUR YEARS OLD.

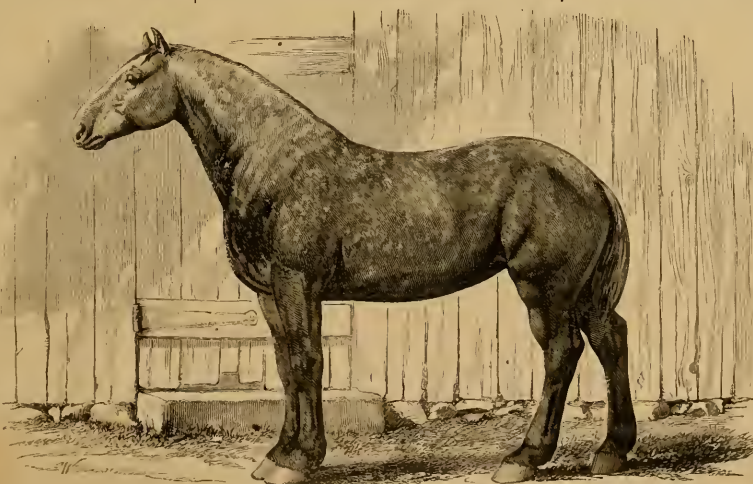


Fig. 2.—IMPORTED PERCHERON MARE "ALENE."

within itself, and without recourse to warm blood, that is, Arabian or English thoroughbred.

The Publishers of the *Agriculturist* have recently issued a neat volume on "The Percheron Horse." It is a translation of the report of Mr. Charles Du Huys to the French Government, and it is well worthy the perusal of all horse breeders. We introduce two engravings from

fine, stylish heavy horses, but not hardly, and apt to be vicious; those with the Morgans, Canadians, and other light, cold-blooded breeds are not uniformly well proportioned, and give disappointment. The recent importations of Percherons, and the interest manifested in this wonderful breed of "all-work" horses, bids fair to make before long a great change in the charac-

ter of the farm and team horses of the United States; and this change, we doubt not, will eventually affect, directly or indirectly, our entire stock of *useful* or laboring, as distinguished from pleasure or light driving horses.

Walks and Talks on the Farm—No. 56.

A few weeks ago an Ohio subscriber of the *Agriculturist* wrote me in regard to the best time to plow under clover for manure. I wrote him that I had little practical experience in the matter, but theoretically the best time was a week or ten days earlier than it should be cut for hay. Dr. Voelcker's investigations [*Journal of the Royal Agricultural Society*, Vol. 3, Part 1, 1867] indicate that when clover bursts into flower there is no further accumulation of nitrogen, but that, on the other hand, there is a rapid formation of sugar and other nutritious carbonaceous substances. To cut clover for hay, therefore, as soon as it bursts into flower, would be a wasteful practice, but it is just the time to plow it under. We get no more nitrogen by allowing it to grow longer; and the more succulent it is, the more rapidly will it ferment and decay in the ground. I wrote to Mr. Geddes, one of the earliest and most enthusiastic advocates of clover, requesting his opinion on the point. In reply he said: "Plow under the clover when it is at full growth. But your question can much better be answered at the end of a long, free talk, which can best be had here. I have many times asked you to come here, not to see fine farming, for we have none to show, but to see land that has been used to test the effects of clover for nearly 70 years. On the ground, I could talk to a willing auditor long, if not wisely. I am getting tired of being misunderstood, and of having my statements doubted when I talk about clover as the great renovator of land. You preach agricultural truth, and the facts you would gather in this neighborhood are worth your knowing, and worth giving to the world. So come here and gather some facts about clover. All that I shall try to prove to you is, that the fact that clover and plaster are by far the cheapest manures that can be had for our lands has been demonstrated by many farmers beyond a doubt—so much cheaper than barn-yard manure that the mere loading of and spreading costs more than the plaster and clover. Do not quote me as saying this, but come and see the farms hereabouts and talk with our farmers."

Of course I went, and had a capital time. Mr. Geddes has a magnificent farm of about 400 acres, some four miles from Syracuse. It is in high condition, and is continually improving, and this is due to growing large and frequent crops of clover, and to good, deep plowing, and clean and thorough culture.

We drove round among the farmers. "Here is a man," said Mr. G., "who run in debt \$45 per acre for his farm. He has educated his family, paid off his debt, and reports his net profits at from \$2,000 to \$2,500 a year on a farm of 90 acres; and this is due to clover. You see he is building a new barn, and that does not look as though his land was running down under the system." The next farmer we came to was also putting up a new barn, and another farmer was enlarging an old one. "Now, these farmers have never paid a dollar for manure of any kind except plaster, and their lands certainly do not deteriorate."

From Syracuse I went to Geneva, to see our old friend John Johnston. "Why did you not

tell me you were coming?" he said. "I would have met you at the cars. But I am right glad to see you. I want to show you my wheat, where I put on 250 lbs. of guano per acre last fall. People here don't know that I used it, and you must not mention it. It is grand."

I do not know that I ever saw a finer piece of wheat. It is the Diehl variety, sown 14th September, at the rate of 1½ bushels per acre. It is quite thick enough. One breadth of the drill was sown at the rate of 2 bushels per acre. This is earlier, "but," said Mr. J., "the other will have larger heads and will yield more." After examining the wheat we went to look at the piles of muck and manure in the barn-yard, and from these to a splendid crop of timothy. "It will go 2½ tons of hay per acre," said Mr. J., "and now look at this adjoining field. It is just as good land naturally, and there is merely a fence between, and yet the grass and clover are so poor as hardly to be worth cutting."

"What makes the difference?" I asked.

Mr. Johnston, emphatically, "Manure."

The poor field did not belong to him.

John Johnston's farm was originally a cold, wet, clayey soil. Geo. Geddes' did not need draining, or very little of it. Of course, land that needs draining is richer, after it is drained, than land that is naturally drained. And though Mr. Johnston was always a good farmer, yet he says he "never made money until he commenced to drain." The accumulated fertility in the land could then be made available by good tillage, and from that day to this his land has been growing richer and richer. And, in fact, the same is true of Mr. Geddes' farm. It is richer land to-day than when first plowed. And yet there is one field that for seventy years has had no manure applied to it, except plaster. How is this to be explained? Mr. Geddes would say it was due to clover and plaster. But this does not fully satisfy those who claim (and truly that) "always taking out of the meal tub and never putting in, soon comes to the bottom." The clover can add nothing to the land, that it did not get from the soil, except organic matter obtained from the atmosphere, and the plaster furnishes little or nothing except lime and sulphuric acid. There are all the other ingredients of plant-food to be accounted for—phosphoric acid, potash, soda, magnesia, etc. A crop of clover, or corn, or wheat, or barley, or oats, will not come to perfection unless every one of these elements is present in the soil in an available condition. Mr. Geddes has not furnished a single ounce of any one of them. Where do they come from? *From the soil itself.* There is probably enough of these elements in the soil to last ten thousand years; and if we return to the soil all the straw, chaff, and bran, and sell nothing but fine flour, meat, butter, etc., there is probably enough to last a million years, and you and I need not trouble ourselves with speculations as to what will happen after that time. Nearly all our soils are practically inexhaustible. But of course these elements are not in an available condition. If they were, the rains would wash them all into the ocean. They are rendered available by a kind of fermentation. A manure heap packed as hard and solid as a rock would not decay; but break it up, make it fine, turn it occasionally so as to expose it to the atmosphere, and with the proper degree of moisture and heat it will ferment rapidly, and all its elements will soon become available food for plants. Nothing has been created by the process. It was all there. We have simply made it *available*. So it is with the soil. Break it up, make it fine, turn it oc-

asionally, expose it to the atmosphere, and the elements it contains become available.

I do not think that Mr. Geddes' land is any better, naturally, than yours or mine. We can all raise fair crops by cultivating the land thoroughly, and by never allowing a weed to grow. On Mr. Lawes' experimental wheat field the plot that has never received a particle of manure produces every year an average of about 15 bushels per acre. And the whole crop is removed—grain, straw, and chaff. Nothing is returned. And that the land is not remarkably rich is evident from the fact that some of the farms in the neighborhood produce, under the ordinary system of management, but little more wheat, once in four or five years, than is raised every year on this experimental plot without manure of any kind.

Why? Because these farmers do not half work their land, and the manure they make is little better than rotten straw. Mr. Lawes' wheat field is plowed twice every year, and when I was there the crop was hand-hoed two or three times in the spring. Not a weed is suffered to grow. And this is all there is to it.

Now, of course, instead of raising 15 bushels of wheat every year it is a good deal better to raise a crop of 30 bushels every other year, and still better to raise 45 bushels every third year. And it is here that clover comes to our aid. It will enable us to do this very thing, and the land runs no greater risk of exhaustion than Mr. Lawes' unmanured wheat crop.

Pearl the butcher has been urging me for some time to raise early lambs for market. I told him that I thought of buying a thoroughbred South Down ram this fall, and picking out a lot of large Merino ewes to cross with him. "Don't you do it," he replied; "get a Leicester. The Leicester lambs are far better." "Is it not too violent a cross?" I asked. "Not at all. Mr. A. got a Leicester from Canada and crossed him with common Merino ewes, and had great luck. I don't believe he lost a single lamb, and they were splendid. They were the best I ever killed. There is nothing will pay you so well. Mr. B. did the same thing with a South Down, and he had no end of trouble in lambing. The heads are so large; and after all, the lambs were nothing like as good as the grade Leicesters. You will miss it if you get a South Down."

I wrote to Mr. Samuel Thorne, who has had several years' experience in raising grade South Down lambs for the butcher, asking his opinion on the point. He replies: "My own experience does not agree with that of Pearl. I have had many South Down and grade South Down lambs, and never, to my knowledge, lost one owing to the size of the head in lambing. As you know, the South Down has by no means a large head. Some of the other Downs have. I fancy Mr. P. has confounded the breeds. In using a Hampshire Down ram one season we had a great deal of trouble, and some loss from this cause. I never before heard any complaints of grade Downs not 'dying well'; on the contrary, the New York butchers, as far as my acquaintance extends, prefer them to any other."

I think Mr. Thorne hit it exactly, and that the ram used by Mr. B. was a Hampshire Down. When at Geneva last week, I saw a fine lot of grade South Down lambs raised by Mr. Swan, from common Merino ewes, crossed with a thoroughbred South Down, and he said he had had no trouble with them. On the contrary, he was delighted with the cross. They had all the marks and the general appearance of the South Down.

Mr. Thorne says he has no doubt that "any of the improved mutton breeds, crossed with common Merino ewes, will produce lambs that will pay a handsome profit." His plan is "to buy good, strong ewes in the latter part of August, selecting those that have the appearance of being good milkers. They are coupled the first of September, so as to bring the lambs in February. The ewes are kept on good hay during the winter, and as they near the time of lambing, one feed of roots a day is given. After lambing they are removed from the flock, the supply of roots increased, and bran mash and some grain added. The object now is to create as great a flow of milk as possible. The lambs soon show a disposition to eat, and a place is then set apart for them where bruised oats and cracked oil-cake, with the best clover hay, are given ad libitum. If the lambs do well they are all sold and delivered by the 1st of June, and the ewes then have the summer in which to get ready for the butcher in the fall. Near any city or large town where early lambs command an extra price, there can be no doubt of the profit to be made by raising them. As soon as the lambs reach 60 lbs. they may be sent off. Mine usually brought me from \$5 to \$8 each. I paid from \$2.50 to \$4.50 for the ewes, and sold them fat the next fall for from \$5 to \$7, and I had the fleeces besides."

This looks like a profitable business, and as June is rather a dry time financially on the farm, the money from the lambs would be very convenient to pay the laborers for hoeing.

I have just returned from a visit to the Michigan Agricultural College at Lansing. It is doing a great work, not only in educating the students, but in making experiments. Dr. Miles, the Professor of Agriculture, was made for the position, and has accomplished wonders. The whole farm is admirably managed, and does great credit to the students, who perform nearly all the labor. During the morning they attend to their various studies. President Abbot took me into the rooms where they were reciting, and a finer set of young men I never saw together. Most of them are farmers' sons. In the afternoon they put on a working suit, and for three hours are employed on the farm, or in the garden or tool-house. They are allowed from 6c. to 7½c. per hour. Some were hoeing corn; others, pulling out stumps with a machine; others were helping the sheep-shearers, tying up the wool, weighing the fleeces of the different breeds and their grades, and entering the weights in a book, with appropriate remarks in regard to length of staple, fineness, etc. One active young fellow was pushing a hand-garden cultivator through the cleanest and best crop of onions I ever saw growing; another was cultivating a young apple orchard; others were in the hay field where a new mower had just started. And the foreman told us that, before working hours, there had been quite an animated discussion as to whether the clover was ripe enough to cut; the freshmen, as a rule, taking the ground that it was too green, and the seniors that while there might not be as much bulk, the hay would be sweeter and more nutritious than if allowed to stand longer. Another question discussed was whether it was or was not best to use a tedding machine in making clover hay. A horse was attached to a tedder, and though the clover was hardly wilted at all, and was very heavy, worked to perfection, and an opportunity was thus afforded of testing the matter. A two-horse cultivator was at work in the corn field, the young man riding and steer-

ing. It was light work, and though the day was very hot, neither man nor horse needed to stop to rest every few bouts, as is so generally the case with an old-fashioned one-horse "corn scratcher." Now, you need not tell me that a young man will not learn a good deal at such an institution. Leaving science entirely out of the question, what he sees of good cultivation, good implements and machines, improved breeds of cattle, and sheep, and pigs, will go far towards making him a good farmer. Success to the American Agricultural Colleges, and may the day soon come (and it is coming very fast), when trained minds and skilled hands shall banish drudgery from American farms. Mark you, I am no advocate for ease and indolence. I believe in work; but I want work to tell. As I came home I saw more than one case where a man was cultivating corn, with a boy riding the horse. The poor horse doubtless wished the boy was at college. Near Detroit I saw two men cultivating potatoes, one leading the horse, and the other holding the cultivator!

Prof. Miles has been making some experiments in feeding grade Merino sheep, grade South Downs, and grade Cotswolds. The Merinos and Cotswolds were lambs, and the South Downs, yearlings. The former two, therefore, give results that are strictly comparative; the latter, not. These grade lambs were from common Merino ewes crossed in the one case with a thoroughbred Vermont Merino ram, and in the other with a thoroughbred Cotswold. "What do you mean," I asked Prof. Miles, "by common Merino ewes?" "The ordinary kind of sheep in this section, such sheep as could have been bought here last fall for 75c. to \$1 a head." The lambs were shut up in pens Dec. 13, and were fed corn and clover hay for 23 weeks, or till the 15th of May. At the commencement of the experiment the two grade Merino lambs weighed 125½ lbs., (one 70 lbs.; the other 55½ lbs.). The two grade Cotswolds weighed 158 lbs., (one 86 lbs.; the other 72½ lbs.). The Merinos eat 325 lbs. of hay, and 249 lbs. of corn, and gained 36½ lbs. The Cotswolds eat 398 lbs. of hay, and 399 lbs. of corn, and gained 67½ lbs. A little figuring will show that it took 1,572 lbs. of hay and corn to produce 100 lbs. of increase with the Merinos, and only 1,136 lbs. with the Cotswolds.

Prof. Miles has figured up the amount of food consumed for each 100 lbs. of live weight. In the 22 weeks, the grade Merinos, for 100 lbs. of live weight, eat 231.81 lbs. of hay, and 168.13 lbs. of corn, and the grade Cotswolds, 212.89 lbs. of hay, and 186.43 lbs. of corn. The Cotswolds eat more corn and less hay in proportion to live weight than the Merinos; but the total amount of food consumed in proportion to live weight is almost identical. Thus the Merinos consumed 399.96 lbs., and the Cotswolds 399.25 lbs.; or a little over 2½ lbs. of food per day for each 100 lbs. of live weight.

It is very evident, therefore, that for the production of mutton the grade Cotswolds are far superior to the Merinos. It is equally clear, too, that by the use of thoroughbred Cotswold or South Down rams we can soon get a very useful class of mutton sheep from common Merino flocks. And at present the wool from these grade Cotswolds is worth full as much as ordinary Merino, and a good deal more than that of fleeces which are more than half yolk.

Mr. Geddes writes me: "I am at a loss to understand what you mean when you say (*May Agriculturist*, page 179), that a ton of straw will make in the spring of the year four tons of

so-called manure. If you had said that four tons of straw would make one ton of manure, I should have thought nothing of it. But how you can turn one ton of straw into four tons of anything that anybody will call manure I do not see. In a conversation I had with Hon. Lewis F. Allen, of Black Rock, more than a year ago, he told me he had enquired of the man who furnished hay for feeding cattle at the Central Yards in Buffalo, as to the loads of manure he sold, and though I cannot now say the exact quantity to a ton of hay, I remember that it was very little—far less than I had before supposed. Mr. Allen could give some important information on this point. Please explain this straw manure matter."

Boussingault, the great French chemist-farmer, repeatedly analysed the manure from his barn-yard. "The animals which had produced this dung were 30 horses, 30 oxen, and from 10 to 20 pigs. The absolute quantity of moisture was ascertained by first drying in the air a considerable weight of dung, and after pounding, continuing and completing the drying of a given quantity." No one can doubt the accuracy of the results. The dung made in the

Winter of 1837-8, contained 79.6 per cent of water.

" " 1838-9, " 77.8 " " " "

Autumn of 1839, " 80.4 " " " "

Fresh solid corn dung contains, according to the same authority, 90 per cent of water.

I have frequently seen manure drawn out in the spring that had not been decomposed at all, and with more or less snow among it, and with water dripping from the wagon while it was being loaded. It was, in fact, straw saturated with water, and discolored by the droppings of animals. Now, how much of such manure would a ton of dry straw make? If we should take 20 lbs. of straw, trample it down, and from time to time sprinkle it with water and snow till we had got on 80 lbs.; and then put on 20 lbs. more straw, and 80 lbs. more water, and keep on until we had used up a ton of straw, how much "so-called manure" should we have to draw out?

20 lbs. of straw and 80 lbs. water = 100 lbs. so-called manure.

2,000 lbs. of straw and 8,000 lbs. water = 10,000 lbs. so-called manure.

In other words, we get 5 tons of such manure from one ton of straw. This is, perhaps, an extreme case, but there can be little doubt that a ton of straw trampled down by cattle and sheep in an open barn-yard, exposed to snow and rain, would weigh four tons when drawn out wet in the spring.

Yes, it is quite an argument in favor of manure cellars. I have always had a prejudice against them—probably because the first one I saw was badly managed. There is, however, no necessity, even in an ordinary open barn-yard, with more or less sheds and stables, of having so much water in the manure when drawn out. The real point of my remarks which so surprised Mr. Geddes was this: We have to draw out so much water with our manure, under any circumstances, that we should try to have it as rich as possible. It is certainly true that if the manure from a ton of straw is worth \$3.00, that from a ton of clover hay is worth \$10.00. And it costs no more to draw out and spread the one than the other. I have never yet found a farmer who would believe that a ton of clover hay rotted down in the barn-yard would make three or four tons of manure; but he would readily assent to the proposition that it took four or five tons of

green clover to make a ton of hay; and that if these four or five tons of green clover were rotted in the yard, it would make three or four tons of manure. And yet the only difference between the green clover and the hay is that the latter has lost some sixty or seventy per cent of water in curing. Add that amount of water to the hay, and it will make just as much manure as the green clover from which the hay was made. This subject is an important one, and should be discussed till it is understood.

A BUCKEYE BOY ON WHEAT GROWING.—W. G. Phelps, Granger Co., Ohio, sends us his father's method of cultivating wheat. We always like to hear from the boys, especially when they write as briefly and as much to the point as the following: "Our land is not considered favorable for wheat. [You should have said why.] We use meadows that the grass has failed on, breaking up about the middle of August. Then roll and put on 10 or 12 loads of manure per acre, and drag once, twice in a place. Then sow the wheat, and drag once. Then sow Timothy seed, and all the ashes and hen manure we have on the farm. Then drag once and roll. This leaves the land in good condition for mowing, and we only lose one hay crop. By putting the manure on the surface we got 23 bushels of wheat per acre last year, while our neighbors who plow it under, and do not roll their land, only got 10 or 12 bushels, and our meadows yield better for this treatment. In breaking up, we plow round the field so as to leave it as level as possible." Where land is clean, and the object is to get it back into grass as soon as possible, as in the dairy districts, we presume this plan is not as objectionable as it would be in the wheat growing sections. Let us hear from the farmers' boys oftener.

Stacking Hay with Horse Forks.

Stacking derricks are awkward things at best, and not a little difficult to set up and manage. The simple shears which we described last year, though they will do the work, are not nearly so convenient as those we now illustrate from the descriptions and *inklings* of Ira B. Smith,

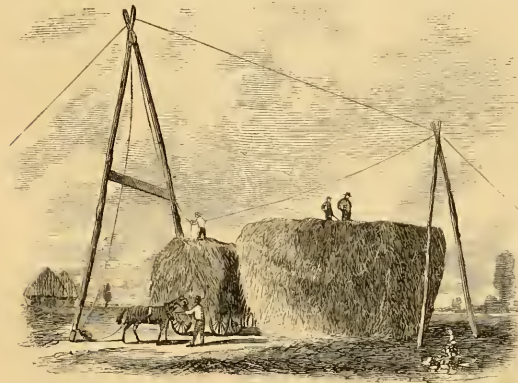


Fig. 1.—STACKING—TAKING THE "GRIP."

of Holden(?). Any horse-fork may have a pulley attached to the top of it. Mr. Smith uses two 40-foot poles and two 30-foot ones. They are set up, forming two shears, one on each side or end of the stack, allowing room for the loads on the side of the taller shears. They are braced by a single strong rope. Fig. 1 shows the posi-

tion of the fork and rope connected with it when about to take a "grip" of hay. The rope is affixed to the top of the lower shears, then passes through the pulley block upon the fork, then through blocks at the top of the tall shears, and at the foot of one of the poles, and is attached to the horse. When the horse starts, the fork with its load rises nearly perpendicularly until the rope is taut; when it slides down the inclined plane made by the rope stretched between the shears, and as it comes directly over where the hay is wanted (see fig. 2), the trip cord is pulled by the man on the load, the hay drops. When the horse backs, the

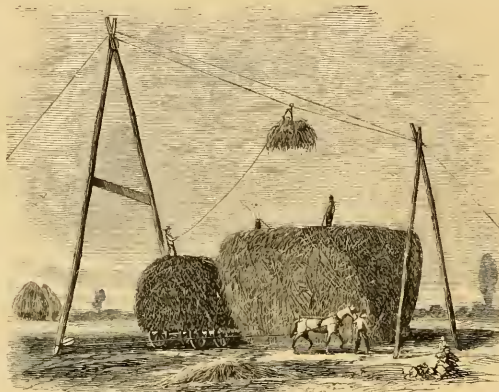


Fig. 2.—STACKING—DROPPING THE FORKFUL.

fork descends again to its starting point. Mr. Smith says: "I have stacked my hay for the last two years with it, and like this arrangement very well. It cost me only about five dollars for rope, and the cutting of a few poles, and does the work as well as any derrick I ever saw."

Barn Cellars for Manure Making.

Animal manures, solid and liquid, are not only valuable to the farmer for the ingredients they contain, considered as food for his crops, but on many farms their value is perhaps chiefly due to the fermentation which they incite in other substances. Thus, very much on the principle of yeast in a batch of dough, a small quantity of animal droppings will make good manure of a great quantity of otherwise inert vegetable matter. Peat, muck, salt-mud, sods, swamp grass, weeds, chip-dirt, saw-dust, and similar substances, are very commonly used to increase the manure pile, but with the impression that they add bulk rather than much value—that they act as absorbents of urine and ammonia, and so save, rather than increase the value of

the manure. This is a grave error, as practice shows. The number of cattle and the quality of their feed are not so important as the manner in which their manure is treated, and the place where it is kept. Exposed in the open yard it is subjected to all unfavorable influences possible. The rains wash and soak it; the sun dries it;

its own fermentation burns it up by internal heat. If water comes from external sources, from the caves of the barns or from higher ground, as is the case on thousands of pretty good farms, it seems almost a wonder that there is any virtue left. The manure ought to be covered. Sheds are inconvenient and cost labor to move the manure into them, and they rapidly fill up, and the heaps are soon too bulky, too much in the way, and besides are exposed to the action of sun and wind, more or less. A well-arranged barn cellar obviates every difficulty. The manure is dropped from the stock floor directly into it; materials with which to mix it

are easily added through trapdoors or sbutes; the liquid manure is from the outset mingled with the compost; the whole is easily spread, worked over, and equalized; it is shielded from the influences of the weather; its fermentation, which might be injurious, is easily controlled; and the system is applicable on every farm.

Absorbents.—The recent promulgation of the fact that dried soil is one of the most efficient absorbents, deodorizers, and disinfectants, is not essentially new. John Smith, late of Holliston, Mass., a prosperous old farmer, asserted twenty years ago, that he could keep his horse in first-rate condition

through the year on hay and grain, and sell the manure made by simply mixing *dry loam* with the excrements, for enough to pay the whole cost of keeping. His plan was simply to gather a great quantity of loam in August or September, when perfectly dry, so that it would not freeze in winter, and store it in a bin contiguous to the horse stall, and keep a large supply—say six inches or more deep—constantly under the horse, removing all that was damp, morning and night, to the cellar below, and replacing it with dry. Besides the saving in manure, this plan is excellent, as it benefits the horses' feet.

Any common loam, even a sandy soil, makes an excellent material to mix with manure in a barn cellar, and either this, (raked over until dry, run through a coal screen, and exposed in a thin layer on a floor to the sun for an hour or two,) or fine dry peat or muck, ought to be conveniently stored under cover in abundant quantity to last all winter, using from a peck to half a bushel to each animal each day on an average. One side of the cellar may be used to store it in, and there is no better month than August to get in a good supply to last all winter.

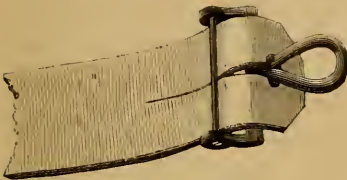
Ventilation is most important in every good barn; and it is especially necessary when animals stand over their own droppings. These, however, when properly mixed with a dry material, of which dry powdery peat, muck, or loam, constitutes a notable quantity, will emit no bad gases or odors. This fact does not in the least lessen the necessity for abundant provision for pure air for the stock.

Decay of Timbers.—It is almost impossible to have cattle stand over a cellar, or on a floor of any kind, and not to have the timbers wet with the liquid manure. This tends to rot them; but so slowly does the decay progress, that we have heard persons soberly express the belief that the effect was rather preservative than otherwise. The amount of unavoidable wetting is very slight.

Carelessness in the management of a barn cellar is productive of three serious evils—no proportionate increase in the quantity and value of the manure, a loss through unchecked fermentation of the manure itself, and damage to the cattle and fodder kept above the reeking mass of decaying matter. Care is naturally and easily given, and demands less labor than the clearing out of the old-fashioned stables.

Hogs in Barn Cellars.—While we advocate barn cellars as the best means of increasing the quantity and value of manure, it is no considerable advantage that hogs may be kept in them, and add greatly to the value of the compost. They are perfectly healthy if the cellar is kept properly supplied with absorbents, and are ordinarily much cleaner than when confined in small pens more or less exposed to the weather.

HOW THE TRACE WAS MENDED.—The familiar story of Columbus and the egg has many



THE MENDED TRACE.

an application in every day life. How many things are absurdly simple—"easy enough if you only think of it,"—yet not thought of at the right time! John H. Simonson, of Brookvale, L. I., was unfortunate enough to have the tug-eye tear out of one of his leathern traces when far from home with a heavy load. If he had cut a hole in the trace for the hook it would probably have torn out. He did better. Shifting the tug, end for end, he put the eye end in the buckle, and in the more flexible buckle end cut a hole and slit, as shown in the engraving, slipped the eye in, and went on with a strong trace. But very little strain is thus brought upon the leather at the hole, on account of the two bearings the trace has upon the bars.

A Grass Doctor—Scuffle Hoes.

A letter too long for a "basket" item, too good to make several of, and too spicy to keep to ourselves, if it be "personal," comes from Down East, and from a lover of grass, and greens, and clean farming. He writes:

"Well—I learned something in L—. Its climate is not suited to pine-apples. Some very nice people are raising Durham cattle in that section. Rob themselves of milk, and lie awake o' nights to raise bulls and heifers. No wonder beef is high. There might be some fun in raising grass there if one did not feel the need of spending ten times the value of the land in draining. I have thought of offering my services to the public as a grass doctor. Why not? Our present science, or no-science, teaches us if we want a fine sod to use 1 per cent of the seed which makes it, smothered with 99 per cent of something we don't want, (and which, luckily, is short-lived,) and wait five or ten years for the natives to come in the good old way of nature. How much better the sod looks where cattle run in the street, by the roadside, than in our "improved" meadows! Send me somebody who has his money yet to spend, and wants to improve old pastures, meadows, and fields—some one who has not his hands

more than full trying to raise pine-apples in the open air! Yes—I think I ought to be a grass doctor. Put my card in the *Agriculturist*, if you think it best, and send me the bill.

I am exercised on the subject of Scuffle Hoes, and think of coming down to see you, and bring the implements, and make a show at a public trial. Have you got some roots just coming up—or anything weedy? If I had the hoes and could get at the people that need them, and by some electric process flash into their minds what I know of the good of 'em, I could sell a million within a month. No patent hoe either. The people's own—the old pattern a little improved, and well handled. With it, weed-killing becomes a pastime like billiards. Set the day for me to come down. I am trying to get a few tools made up North, in the hoe and handle country. Who knows but I can divide the affections of the nation with General Grant! Win or no win he'll go out of fashion in time; but I think Scuffle Hoes more durable. Say the word. I don't wish to wander about New York in summer, but if you want to see me kill weeds, or hear me talk about grass, I'll give you a visit soon. My diet is bread and milk. If you have a calf that takes all the milk of three cows I shan't come. That is a species of calf-worship worse than that of the Hebrews."

Perfectly Safe Whiffletrees.

It is his own self-control that renders a horse manageable. When anything happens to disturb this, and a horse becomes frightened, thoroughly frightened, in his frantic struggles or dashes he may quickly ruin himself, destroy precious lives, and much property. One of the most frequent causes of fright to horses is the breaking or displacement of some part of the harness. Hence every careful man is always sure that nothing about it can possibly go wrong. A correspondent of the *Agriculturist*, saved, providentially, from imminent danger, caused by the trace becoming unhooked from the whiffletree, asks us what style of attachment of the trace to the whiffletree is perfectly secure? There is very little danger of most of the common fastenings unhooking, yet we think that all those which require that the eye should be held simply in an unusual position in order



Fig. 1.

to be inserted in the hook, are liable to the danger of having the eye accidentally rattled out the same way. The following engravings, figs. 1 and 2, show a combination of hook and spring which holds the eye until it is unhooked by human hands. Fig. 1 is the simplest, strongest, and most convenient—in fact, the only one we have ever used or seen; still we can imagine an accidental pressure to be brought upon the trace eye in such a way as to cause it to press down the spring and slip out, as we do in unfastening it. Such a case can hardly be imagined, however, with reference

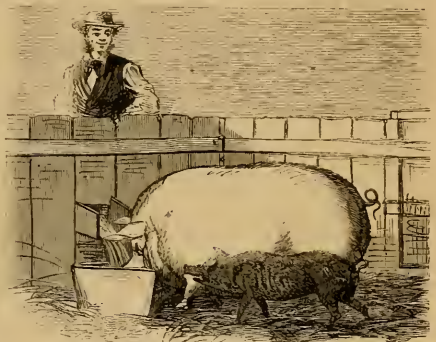


Fig. 2.

to the arrangement shown in fig. 2, for here the end of the spring being bent at a right angle, and sinking into a slot in the cap, makes it necessary to bend down the spring from outside the hook in order that the eye may be disengaged. The same end may be accomplished by a stiff spring.

How to Make Hogs Extra Fat.

Hogs well fed and kept clean will fatten rapidly. If true economy be consulted the grain will be ground and cooked. Hogs have good appetites and a powerful digestive apparatus. It is a well known fact that the appetite will



JEALOUSY AS A TONIC IN FATTENING HOGS.

usually fail long before the hog's ability to digest well is impaired by surfeiting. Though swine in thin flesh fatten very rapidly, fat hogs increase in weight slowly, often greatly to the disappointment of their feeders. This is due usually to the failure of the appetite, and in case we want hogs very fat, we seek to remedy the difficulty by varying the food and stimulating a desire to eat, in various ways, feeding little and often, in order to make the animals eat as much as possible. A good story was lately told us of several neighbors who year after year vied with one another in trying to produce the fattest hog, each taking a pig from the same litter, or in some way starting fair and square with pigs of the same age and size, and doing his best to make it as fat as possible before Christmas. One of the farmers invariably beat the others out and out, so thoroughly that his good luck could never be accounted for as accidental. The secret he kept to himself, but being watched by some one determined to find it out, the discovery was made that jealousy is a grand appetizer for hogs. First the pet monster was allowed to fill himself to his heart's content, and when his appetite was satiated, a half-starved shoat was let in to the pen by a side door. The fat one would at once begin to fight it off, and meanwhile, to gorge himself, simply to prevent the poor squealing victim of unsatisfied cravings getting any food. This was a daily programme, and the result was as stated. The fact is worth bearing in mind, for in preparing hogs for exhibition, or for some reason, we are often desirous of expediting the fattening process.

Peat and Muck as Fertilizers.

The season when the swamps are usually driest leads us to call attention to the muck mines. There has been a very great change in the use of peat and muck during the last twenty years, but it is still not half appreciated. Multitudes who have these mines upon their farms never work them. There is a great difference in the character of the peat and muck found in our swamps, but it is rare to find one that does not afford a fertilizer that will pay largely for carting and composting. A few bogs have been found containing soluble salts of iron (copperas or green vitriol), in such quantities as

to be injurious to vegetation, but even the peat dug from these bogs is readily corrected, and made valuable by composting with lime. Men who have once begun to tap the muck mines generally go in deeper every year, until the wants of their farms are fully supplied. The writer has derived so much benefit from the use of muck in his farming, that he has no doubt it is, to most farmers, the cheapest and best amendment of their soils. He would apply it in large quantities to all sandy and gravelly loams, and, when composted with other manures, to all soils under the plow. So rare is it to find poor or poisonous peat, that the presumption is, in every case, that a peat or muck swamp is a mine of wealth to the farm. We should not want to work land in any of the older States, that had not this source of improvement upon it or very near it. If the swamp has never been worked, it is easy to test it in a single season. Throw out a quantity of muck, and if, after the first winter, weeds grow freely in it, it is a good article. Rank weeds indicate luxuriant corn and potatoes. Or, take the weathered muck, and mix it with sand, and plant a few flower seeds in it. Or, better still, spread a few bushels of it upon the grass, and note the results. When you have found a good bed, work it largely, as if you had faith in it. If 500 cords are thrown out the present season, there will be use for the whole of it. It is of great advantage to have it dug, and drawn out upon hard land, aside from its improvement by exposure to the weather. It loses more than one-half of its weight in the water which drains from it, and this saves one-half the expense of cartage. Then it is always accessible, and a few loads can be put into the yards or stables, as wanted. It is ameliorated by exposure to the air, the rains, and the frost. The more frequently it is overhauled, the more rapidly it improves. If it is to lie upon the banks of the ditch or pit whence it is thrown out, boards should be put beneath it, to make the drainage thorough. Unless the peat is of very good quality, and in quite limited quantities, it is usually better not to dig more than six feet from the surface. There are several ways of using peat to advantage. Some varieties are so good that when weathered they can be applied directly to the land, as a top-dressing for grass, or be plowed in for food crops. But these are exceptions to the general rule. As absorbents are wanted, peat is often the most convenient article that can be used, and, applied in sufficient quantities, it prevents all loss of ammonia in the stables, sties, yards, sub-drains, and privies. It is a complete deodorizer, and could be profitably used for this purpose alone. Some have a gutter constructed at the rear of the stalls, and put about a bushel of muck in the gutter daily to each animal. This is thrown out every day, and mixed with the solid feces, and more muck is added to the heap of compost. Others keep a bed of the peat, say 10 inches thick, constantly under the animals, bedding well with straw, and renewing the absorbent every ten days. The animal heat hastens decomposition, and we know of no way in which peat can be so rapidly transformed into a good fertilizer. Others have movable floors to the stables, and the muck is thrown into the pit beneath, which saves all the liquid manure. If the stables are in constant use, the muck should be renewed every six months, or oftener, if thoroughly saturated. It is also much used in making a compost with stable manures. A layer of peat one foot thick is placed upon the ground. The heap for convenience in working

should be not less than eight feet broad, four or five high, and of any desirable length. Upon the layer of peat put three inches of manure, then one foot of peat, and so on in alternate layers, until the heap is finished. It should lie in heap for two or three months, and be forked over twice. We have found a compost made in this way quite as effective as stable manure. Various other articles are used for composting with peat, such as night soil, Peruvian guano, ashes, lime, dead animals, factory wastes, etc. Every farmer should own Professor Johnson's little work on "Peat and Its Uses," where these matters are very fully discussed.

Tillage During the Growth of the Plant.

The stirring of the soil around cultivated plants is a very important part of husbandry. Just how much it will do for all our crops has never been satisfactorily determined by accurate experiments. If some have thought it was the one thing needful, and tried to prove it, their experiments have not made a very deep impression upon the public mind, for intelligent farmers keep right on making and applying manures at very great expense, showing that they have quite as much faith in manure as in tillage. Men are prone to ride hobbies, and tillage, perhaps, has been overestimated by a very few agricultural writers. We think the tendency now among our best farmers is towards a more thorough and frequent cultivation of crops, and their conviction is very strong that it pays as well as any other application of labor upon the farm. Our inventors have responded to this conviction, and given us improved tools to cheapen tillage. The hand-hoes and scurifiers have reached the last limit of lightness and convenience. We have a variety of harrows and cultivators for horses, which, in many parts of the country, have almost entirely superseded the hoe for field crops. These tools have greatly reduced the expense of cultivation, and made it more frequent and thorough. The first office of tillage is to destroy weeds. These grow very rapidly in summer, especially where the land is foul and rich, and unless subdued, damage the crop. They want the same nourishment as corn and potatoes, and, if neglected, will diminish the crop more than one-half, and make it cost more than it can be sold for. Many farmers lose money on their field crops from this neglect, and if they would make a careful estimate of the cost of labor bestowed upon a particular field, and compare it with the market value of the crop, they would see it. Tillage not only destroys weeds, but makes the soil ready to receive the full benefit of the rains, the dews, and the atmosphere. When the surface of the ground is disturbed by the hoe or cultivator, the particles are left loose, and drink in the rain and dew greedily. The air also circulates more freely in the soil among the roots of plants. Ammonia, in very small quantities, is brought down by the rains, and the roots of plants get the full benefit of it. Soon after cultivation, a thin crust forms over the soil, and the better the quality of the soil, the thicker this crust, and the more frequently it needs to be disturbed. Tillage is to a certain extent a substitute for rain as well as for manure. Every careful observer has had occasion to notice this in times of drouth. The curled corn leaves will expand under the influence of the cultivator and the hoe. Just how much cultivation will pay we may not be able to tell. But there can be no doubt that the crops would pay for much

more than they get. The practice is increasing rapidly in England for farmers to sow their wheat with drills, and cultivate it. Thus they get a largely increased yield. In fact, the average yield per acre is nearly twice the average crop that we get in this country, where wheat is almost never cultivated. Farmers who have the sulky cultivator sometimes cultivate their corn as many as six times, and get seventy or eighty bushels to the acre. They manure well, it is true, but they claim that their frequent cultivation pays as well as the manure, and we think they are right. The old-style farmers, who hoe their corn the third time, claim that the last cultivation is as profitable as the first and second. It pays not only in the larger yield, but in clean fields the next and following years. We have noticed in mechanics' gardens, kept scrupulously clean by an hour's work at morning and evening, much better crops than in farmers' gardens where there was plenty of manure, but much less cultivation. The man who hoed his cabbages every morning before breakfast carried the joke a little too far, perhaps, but he had a splendid crop. We are confident that once a week is none too often to put a cultivator between the rows of corn, until it gets too big for the operation. We should like to see an experiment tried on corn to show the difference in yield between twice cultivating or hoeing, which is the old-style treatment, and thorough cultivation six times, which some of our best farmers practice.

Medicating Animals.

Some of our domestic animals are removed almost as far from a state of nature as we are ourselves. Subjected to the influences of civilization, they are made liable to accidents and diseases which would never trouble them but for their association with man in his unnatural life. We may shield our animals from many ailments, by attending to their diet, the cleanliness of their quarters, to the purity of the air they breathe, to proper shoeing, yoking and harnessing, etc., but nevertheless they will occasionally become diseased, or injured, and need medical or surgical care. We are badly off for veterinary surgeons in this country, and in ninety-nine cases out of an hundred the owner must do something for his sick animal, or stand by and helplessly watch the progress of the disease. A physician of large practice and experience told the writer not long since, in deprecating the habit of people drugging themselves, and applying to apothecaries and physicians for medicine, not being satisfied unless medicine be given, that at times he felt almost as if it would be a blessing to humanity if all taking of drugs could cease, and both patients and physicians would be forced to prove the efficacy of good nursing and attention to diet and the general sanitary condition of the system. Another physician of great and good repute in New York City remarked if he could have his choice of hospitals in which to treat 100 patients sick with usual diseases, and could get a dry, sunny field, protected by a wood, and have canvas for shelter, he would much prefer the latter place, and felt confident he would report a much larger proportion of cures. If these are facts with relation to the human being, how much more important must it be for animals not to be injudiciously drugged, and confined indoors! Every farmer ought to know how to recognize early symptoms of disease or disordered functions in his animals, and be able to apply simple remedies. The best class of reme-

dies are such changes of diet as will produce the desired effects. For instance, raw roots will produce looseness of the bowels, and alway feverish tendencies in horses, cattle, sheep, and swine. So will fresh grass cut and fed with the dew on. Bailed fine wheaten flour porridge made with water for horses, that will not take milk, and with sweet milk for other animals, will produce the opposite effect. Other sanitary effects may be produced by the use of articles of food. And we have no doubt with care the list of effects produced by different kinds and mixtures of articles used as food, might be greatly extended, so that most ordinary ailments might be checked by early attention to diet and surroundings. In our own experience we have found that sick horses turned out into a woody pasture almost always got well, or improved greatly; that cows and young cattle let alone on a natural diet, with fresh water, air and salt, did better and got well quicker than if subjected to any guess-work treatment. However, a good dose of Epsom salts and ginger seems to be almost a specific for feverishness, ("horn ail," constipation, colic, clotty or red milk, etc., with cows, and it is well to hold this in reserve, in case a change of diet has no good effect. Sick chickens get well in a grassy run among angle worms and grasshoppers. Sheep that are snuffling and running down in close barn-yards will pick up wonderfully if they can get their noses into the hedge rows, or have a run in the woods or bush pastures. In the variety of herbage and twigs they find the best diet. Pining hogs will get well in a clover pasture, or on clover hay in winter. And they will improve much faster if they can live on nuts and roots, having the ability to use their snouts as was intended.

Possibilities in Dairying.

Very interesting facts were brought out at the last meeting of the Board of Agriculture in Connecticut, in regard to milk. One farmer, from a herd of twelve cows, produced 33,199 qts., or an average of 2,766 qts. per cow, which is over 8 qts. a day for a season of eleven months. His average price for milk was 4½ cts. per qt., which made \$131 for milk; and the calves brought \$4 each, which made the return for each cow \$135 per year. In the memorial presented to the New York Legislature by the State Agricultural Society, the number of cows in the State was put at 1,123,000, and their products in cheese at 48,548,289 lbs. = 242,741,445 qts.; products in butter at 103,097,280 lbs. = 1,030,972,800 qts.; products in milk sold, 84,000,000 qts.,—making 1,357,744,245 qts. 5 qts. of milk are reckoned for one pound of cheese, and 10 qts. for 1 lb. of butter. This, divided by the number of cows, would give 1,209 qts. as the average annual product per cow in the best dairy State in the Union. It is a fair statement to say, that there is a difference of more than one-half between the average product of cows in the State, and the product of the best milkers. At the meeting referred to, E. H. Hyde stated that he once had a Durham cow that produced 55 lbs. of milk, which made 2 lbs. 15 oz. of butter daily for thirty days in succession, and a Devon that made 24 lbs. a day. An Alderney cow was mentioned that produced 26½ lbs. of butter in 10 days. These facts, and a good many others that might be stated, show that there is great need of improvement among our dairy stock. It is quite possible to double the product of milk in a very few

years, without increasing the number of cows. A first step in this direction is to get a better race of milkers. Our best dairymen understand this, and are aiming at it. They get the best native milkers, and breed with a thoroughbred bull, from a good milking stock. The grades thus produced will generally be good milkers. Their offspring will usually be an improvement, and this may be expected for several generations. A distinct family of Short-horn grades has been produced in East Windsor, Connecticut, by this process, within the last thirty years. They are great milkers, and sell at very high prices. The importance of a thoroughbred bull, to secure good milkers, is now insisted upon by all intelligent breeders.

Of course, feeding has much to do with a large flow of milk. For three months in the year, in favorable seasons, a cow may produce nearly up to the limit of her capacity on grass. But after this, the grasses become less succulent, or short, and the milk falls off. The feed must be generous all through the season, and a cow is generally profitable in proportion to the amount of food she consumes. The pasture must be supplemented by green fodder, rye, corn, clover, and in the winter, by roots, grain, oil-cake, and other rich food. There may be a good deal of high feeding without damage to the constitution of the animal, and with decided benefit to the character of her progeny. Shelter, also, has an influence upon the productiveness of the herd. Cows fed at the stack, during the winter, will not give as much milk the following season as those fed in a comfortable barn, although they will consume a third more hay. Kind treatment and frequent feeding are also elements of success in the production of milk. Some dairymen, who produce milk for market in the winter, feed as many as six times in the course of the day, with a great variety of food, and keep water constantly in the manger. A good milker wants water every hour in the day, and she secretes milk much better for having it constantly before her. If this course of improvement be entered upon, more capital must be invested in manures, barns, provender, and stock, but there can be no doubt that the returns will be far more satisfactory.

Salt Mud as a Fertilizer.

Large quantities of mud accumulate in the bays and coves along the sea-shore, made up of the wash of rivers, of decayed manure, vegetation, and in many cases also, of animal remains, shell-fish, and very minute organisms. It is found in many places of great depth, and so soft that an animal would sink out of sight in it. It is very fine, and of great value as a fertilizer. Near the shores, this mud is laid bare at every low tide, and it might be easily secured by the use of wheelbarrows and planks. In deeper water, eel grass strikes its roots into it, and the mud is pulled up in large quantities, with the eel grass rakes. Much of the virtue attributed to the grass, which is generally used by shore farmers, is doubtless due to this mud. More of the mud and less of the grass would be better policy. We have seen the mud applied as a dressing for corn and potatoes with the best results. It is an excellent top-dressing for grass, often doubling the crop the first season. An analysis of this article, made by Prof. Johnson, shows that the organic matter contains nearly 4½ per cent of nitrogen, or nearly double the amount found in good peat. The mud should be weathered a few months before it is applied. Summer is the best time to secure it.

Canada Thistles in the West.

Canada thistles have been discovered in the West, notwithstanding their existence has been doubted by some of our cotemporaries. The legislature of Iowa passed the following law in regard to them, at its last session: "That if any resident owner of any land in this State, after having been notified in writing of the presence of Canada thistles on his or her premises, shall permit them, or any part thereof, to blossom or mature, he or she shall be liable to a fine of five dollars and costs of collection, for each offence." True, they may not know the plant in that enterprising State, but it is just possible that there may have been some one in the legislature of sufficient botanical knowledge to save the body from the folly of passing a law against a foreign plant. A writer in the Journal of the New York State Agricultural Society mentions a farmer who has cut Canada thistles from the 15th to the 25th of August for the last four years, and thus destroyed them. The reason he gives for this is that at this season the stalks are hollow, and the rain and dew settle in them, and they rot to the roots. The experiment of cutting them at this season ought to be made. It will be enough for most farmers to learn that the practice is successful. The policy adopted by the State of Iowa is a good one, and ought to be adopted by all the States where this plant has made its appearance. The law also ought to hold railroad and other corporations, and the town authorities, responsible for the thistles growing outside of private property.

The American Marten.

The Weasel family, to which the Marten belongs, includes several of the most voraciously carnivorous animals of the world,—among them those which the Marten most closely resembles, namely: the Mink, Weasel, Ermin, Sable, and Ferret, all of which produce beautiful and valuable furs. Were the Lions, Tigers, and Leopards, half so ferocious and voracious, the countries where they abound would be hardly habitable. The American Marten (*Mustela Americana*) is found in the United States, in Northern New England and New York, in Michigan, and the Lake Superior region, and westward, but it abounds in Canada, and northward, the fur bearing the name of Hudson-Bay Sable. The Marten measures about 17 inches to the tail, which is about 10 inches long; the fur is fine, of a reddish yellow or brown, clouded with black, the legs and tail shading from dark brown to nearly black. The throat and breast to the fore legs are yellowish. This species so closely resembles, both in appearance and habits, the Pine Marten (*Mustela Martes*), of Europe, that it has been regarded as identical. Its habits are very similar also, but it is not found so much in inhabited districts, and on this account we do not hear of its depredations in poultry yards and sheep-folds. The Marten is a great climber, being as much at home in trees as the squirrels. It is cautious and crafty, taking birds of all kinds, rabbits, and even squirrels, either by stratagem or pursuit. The position of a Marten in the trees is often indicated to the hunter by the chattering flock of small birds which follow it in all its movements, as they do hawks and other fowls. The fine engraving on the next page is by a German artist, Carl Deiker, and though representing the European Marten, is an excellent picture of our native animal.



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THE SURPRISE.—MARTEN AND SQUIRREL.—FROM A PAINTING BY CARL DEIKER.—(See preceding Page.)



SILPHIUM LACINIATUM.

The Compass-Plant or Rosin-Weed.

In looking over a recent French work upon floriculture, we were surprised to see one of our prairie plants introduced as desirable for ornamental purposes. The plant is known in the West as the Compass-plant, or Rosin-weed, and to botanists as *Silphium laciniatum*. The first, or generic name, is an ancient Greek one of some plant, which was applied to ours by Linnaeus; while the specific name—*laciniatum*—describes the cut character of the leaves. It is a strong-growing perennial, from three to six feet high, bearing at its summit several rather coarse yellow flowers about 2 inches in diameter. The root leaves, as well as those on the lower portion of the stem, stand erect, and have the general form of the one shown in the engraving. The root leaves are from one foot to two and a half feet in length, and, with the whole plant, of a dull yellowish green. The only claim that this plant can have to a place in the garden must be found in its rather striking, though coarse and inelegant leaves. In the present rage for plants with ornamental or grotesque foliage—"phyllomania," as it has been called—we do not wonder that this *Silphium* has been taken up. Burdock, if it were rare, would exceed in real beauty some of these highly prized and highly priced "foliage plants." The common name, Rosin-weed, is given it on account of its resinous juice, which often exudes and hardens upon the stems and leaves in the form of small yellowish tears. The term Compass-plant is from the alleged fact that the edges of the leaves point north and south. This has given it other names of similar import, such as Polar-plant, Pilot-plant, etc. The statements with regard to the polarity of the leaves have given rise to dis-

cussions, both here and abroad. As we have seen the plant in gardens, its leaves "knew no south, no north, no east, no west," but quite "boxed the compass;" still, evidence goes to show that upon the open prairies the direction of the leaves is so generally towards north and south as to warrant the popular name. The plant is found in Michigan and Wisconsin, and southward and westward. There are five other species found east of the Mississippi, some of which have been cultivated in the garden.

THE AMERICAN WISTARIA.—The beautiful Chinese Wistaria, now so deservedly popular, was figured in March, 1865. It has nearly crowded out of sight our native species—*Wistaria frutescens*. While we give the foreigner credit for being larger flowered and more showy, we like our native one for several reasons; it is hardier, it is later, and it is American. We had frequently seen it in gardens, where, being only a native plant, it was usually allowed to take care of itself. Last year we set out a small plant of it, and carefully trained it, and it rewarded the trouble by climbing to the height of two stories with abundant side branches; and now, near the end of June, it is filled with

a profusion of its pale lilac clusters, while our neighbors' foreign vines went out of flower a month ago. With our strong partiality for native plants, if we could have but one Wistaria it should be the American. We do not say that it is as handsome as the other, but there is a delicacy, a tenderness, about the color, which pleases us more than showiness. There is a white variety, which is as yet rather rare; it differs from the other only in producing flowers that are pure white. It is a truly beautiful climber.

This Wistaria is a native of Illinois, Virginia, and southward. We believe all the nurseries keep it. By the way, this makes a fine pillar plant, when grown around a post six or eight feet high. Keep the new growth pinched back to two or three leaves, which will induce the formation of "spurs." At flowering time a specimen that has been treated in this way will be a mass of bloom from top to bottom.

The Caper Family of Plants.

The capers of commerce and cookery are the pickled flower buds of a South-European shrub, *Capparis spinosa*. A number of other plants much resemble this in structure, and botanists have brought them together into a family, which, *Capparis* being the type, they call *Cappariaceae*, Caper-like plants, or the Caper Family. There are just here more hard words than the *Agriculturist*, often gets so near together, but we like now and then to show that botanists have a reason for using such words. This family is related to the Mustard Family (*Cruciferae*), but differs in points not necessary to discuss. In some of its members the pistil (and sometimes the stamens) is lifted upon a stalk for some distance above the bottom of the flower. Like



CLEOME SPINOSA.

plants of the Mustard Family, those belonging to this are pungent and often very acrid; some are even poisonous, and all have a very disagreeable smell. Our only representative east of the Mississippi is *Polunisia graveolens*, which is not common enough to have a popular name. Some members of the Family, belonging to the genus *Cleome*, are cultivated for ornament. They are very pretty to look at, but disagreeable to handle, on account of their odor; still, they are free bloomers, and there is an airy effect produced by their curious flowers, that renders them desirable in the garden. Some are perennials, but with us they are usually grown as annuals. *Cleome spinosa*, the one we figure, grows about four feet high, and has a spiny stem. Its spike of flowers is white, or sometimes purplish. *C. grandiflora* grows to the same height as the preceding, and has a larger spike of pale purple. It is the most showy. West of the Rocky Mountains there are several representatives of the Caper Family, and on the Pacific Coast a good-sized shrub, *Isomeris arborea*, which is notably showy and curious, but which probably would not stand our climate.

Old-Fashioned Shrubs and Flowers.

[The *Agriculturist*, while it endeavors to keep its readers advised as to the valuable novelties among plants, also tries to keep the good old plants from falling into neglect. Mrs. "F. H. R." writes us on this subject, and though her communication is not of the practical character usually given in these columns, she puts in a plea for "old-fashioned" flowers so pleasantly, and with such womanly earnestness, that we are sure it will gratify our flower-loving readers.]

"We call these shrubs and flowers old-fash-

ioned because we first saw them growing in all their freshness and homely luxuriance in the old-fashioned gardens, and around the plain, unpretending doorways of our grandparents, so many years ago. The Lilac, with its crisp, purplish, grape-like bunches; the Myrtle, [Periwinkle—Eus.] whose starry blossoms seem almost to have stolen their hues from the sky; the Snowdrop, always so suggestive of the pale, lifeless fingers that so often clasped them,—all these, and very many more, have to us a charm of their own, and so they remain each year in their own quiet, secluded corners, while showy mounds and extensive borders are brilliant with the many-hued gems of more modern times, and redolent with their rarer perfume.

It is the old, dearly loved Past that is dreamed over as one ministers to the wants of these shrubs and plants, in freeing them from the dead leaves, in loosening the soil around them, and pruning them to a healthier growth; and one likes to linger near a Rose-tree or Snowball, bending low with its weight of snowy burdens, and think, 'My grandmother loved these. I used to gather them for her when a child.' Then comes the always fresh remembrance of the old-fashioned garden, old-fashioned ways, and the kindly throbbing hearts of old-fashioned times, and whatever the heart may be now, whether seared with the conflicts of long, bitter years, or hardened to all gentler influences, one moment, at least, has been devoted to that which was pure and good.

So we have a way of dividing our garden into two kingdoms. One shall rule the Past, and the homely beauty of its rose-trees and lilacs shall keep fresh in our minds the dearly loved 'days of old,' and keep the memories of happier days near the heart, that their gentler influences may dispel all the evils that beset it.

Our fuchsias and verbenas and geraniums may still nod their graceful heads at every passing breeze, but we will devote *their* beauty and brilliancy to the Present and Future, with the thoughts, 'They are pure as heaven. The same hand that distills the gentle dew in their grateful cups, and the same air and sunshine that nourish their sweet lives, bring to us as they do to them, life and health. Like them, we must learn to mirror the purity of heaven in our hearts and lives.' So let us devote at least one quiet corner to our sombre-hued flowers, and thus perpetuate our veneration and love for the Olden Times. Once or twice a year, we will walk under their sheltering boughs or stoop to gather their modest tributes, and linger for the sweet story their enfolded leaves and blossoms impart, but for those who come to 'see our garden'—why, we will lead them away from the old-fashioned flowers to admire the rare beauty of our last collection from the green-house."

Odds and Ends in Gardening.

A garden of moderate pretensions well kept is more pleasing than a large and neglected one, even if it be filled with rare and costly plants. Frequent going over the plants and attending to their needs at once is necessary to order and neatness. One who loves plants will be daily among them, tying, nipping, propping, and making everything do its best. Tying materials should be always at hand. For vines and plants generally we prefer Russia matting to anything else. Get a bright, fresh piece, and keep it where strands can be pulled out as needed. Wetting makes them sufficiently flexible. To have the material always at hand, we

cut up the strips into convenient lengths for one or two ties, wet it, and place it in a case made by folding a bit of oil cloth carpet. This can be carried in the pocket of the working coat all day, and be in good condition to use. In bringing into shape plants that were disposed to sprawl too much, we have found Wilcox's Garden Trellis very useful. For some plants this makes too much show; all supports should be concealed as much as possible, and we use a ring of galvanized wire, tied to three small stakes, after the manner of the trellis made of hoops and stakes figured in May last on page 173.

In flower gardens there is much small work to be done, especially among bedding plants before they cover the ground. These are set so closely together that no ordinary implement will work among them conveniently. We took a large kitchen fork, such as is used to lift heavy meats from the pot, cut off the shank at a convenient length, fixed on a handle, and found we had an excellent implement for working among such plants. By its frequent use the surface is left in that open and mellow condition so conducive to the health of the plants and the well-kept appearance of the beds.

The Grape Vine—How It Grows and What to Do with It.—7th Article.

This is the proper place in which to reply to the question of some of our correspondents. *Removing Leaves.*—Never remove the leaves of a vine with a view of ripening the fruit. True, we have recommended the stopping the growth of the bearing shoot at three or four leaves above the uppermost bunch of grapes. This results in rendering the remaining leaf surface more effective, and better able to perform its part in developing and maturing the fruit. The

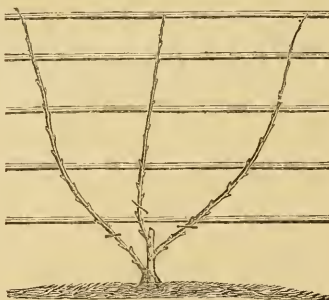


FIG. 16.—VINE AT END OF FIRST YEAR.

remaining leaves grow larger, thicken up, and become firmer in texture, and are better able to resist disease. The leaf opposite the cluster is the one mainly concerned in the nourishment of that cluster, and to remove it is to take away its sustenance. For the best development of fruit the leaves need full exposure to the sun and air, while the clusters need that genial shade afforded them by the leaves.

Tendrils.—These may be removed; they are of no use to the vine if the shoots are kept properly tied to the trellis, and are often an annoyance to the cultivator. In the wild vine they are needed for its support, but in proper cultivation the shoots are kept in place by artificial means. The ingenious Mr. Meelan, of the Gardener's Monthly, has advanced the idea that plants expend a certain amount of vital force in overcoming the attraction of gravitation, i.e. a vine which has to support itself by tendrils, or by twining, uses up a certain

amount of power which might be turned in another direction. If Mr. M.'s views be correct, (and they have met with the acceptance of some of our best authorities,) then the removal of the tendrils and providing a support in their

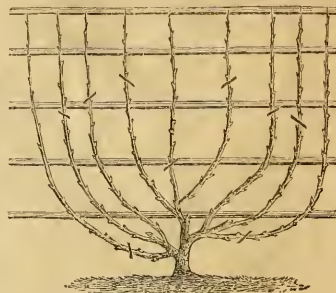


FIG. 17.—VINE AT END OF SECOND YEAR.

stead should result to the benefit of the vine. In previous articles we have given various forms of the Horizontal-Arm system of training, and though the modifications of which this is susceptible are not exhausted, we turn now to other plans. It is often desirable to cover a trellis or screen with the foliage of the vine, the shade and shelter being of quite as much importance as fruit. From a neglect of the laws of the growth of the vine—which we have endeavored to set forth in this series of articles—this covering of screens and arbors is usually done in a very unsatisfactory manner. The vine soon gets the better of the cultivator for the want of starting right. To cover a screen or arbor we must keep up a succession of new wood, and constantly bear in mind that a cane that has borne once never bears again, but becomes a part of the stem. Let us suppose that a good young vine was last autumn cut back to three buds, and that the shoots from these have made a strong growth during the summer. In autumn the vine will appear as in figure 16. The three canes at pruning are to be shortened to three buds each. The following summer nine shoots will grow, which in autumn will be ripened into nine canes. The stem will present three divisions, each of which bears three canes, figure 17. In pruning the vine at this time, one of each of the three canes is cut back to two buds, to produce new shoots to extend the vine the next year, while the other two are pruned to eight or ten buds, according to their strength. The shoots from the canes pruned to two buds should the next summer be laid in so as to best cover the trellis. The shoots from the buds upon the longer pruned canes will produce fruit. These should be kept tied to the trellis, and when they have made three or four leaves beyond the fruit, be pinched—indeed, treated just like upright fruiting shoots heretofore described. These canes are simply upright arms, bearing their shoots one above another, instead of in a horizontal position. At the end of the year in which we suppose this growth to have been made, the vine will appear as in figure 18, which shows only a portion of the vine. The vine in this condition, in which it is supposed to have quite covered the screen, is to be pruned with judgment and with the laws of growth well in mind. The weaker canes are to be cut back to one bud, the others to two, three, or more buds, as may be required. It is necessary to recollect that every bud will produce a shoot, and to look forward to the future growth. In the treatment of such vines, too many rather than too few buds are apt to be left. While a

vine grown in this way will not produce as fine fruit as in a system in which the pruning is closer, it will do much better than those subjected to the usual haphazard treatment.

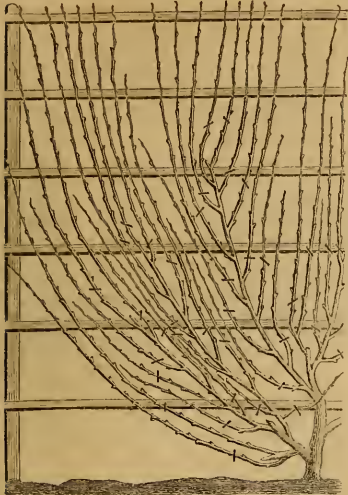


Fig. 18.—VINE AT END OF THIRD YEAR.

When a screen is needed for the sake of privacy, or for shutting out unsightly objects, a grape vine answers excellently. We should say that the figures used in this article are from the excellent work, "Grapes and Wine," by Mr. George Husmann, of Hermann, Missouri.

A Stand for a Hand Microscope.

Those engaged in studying plants or insects need a magnifying glass which will allow them to have both hands free to dissect with. Such instruments are made in this country, but as they cost from \$12 to \$15, they are out of the reach of most young students. It is a pity our instrument makers don't furnish us with a



Fig. 1.—MICROSCOPE STAND.

* cheap and good glass of this kind, as they do in France. A tolerable substitute may be made by mounting a good pocket lens in the manner shown in fig. 1. A strong upright wire is fixed to a heavy foot, which may be lead, iron, or any other material heavy enough to be steady. Upon this wire is placed a large cork, and through the cork at right angles to the upright is pushed a smaller wire, to serve as an arm to hold the glass. The end of this wire is bent up at right angles, and fits into holes bored in the shield or cover of the glass. The wires should fit into the cork moderately snug, but not so tightly as to require much effort to place the glass in any required position. For a stage on which to place the object to be examined or dissected, a white jar or druggist's gallipot answers very well, but this serves for opaque objects only. With most transparent objects some contrivance for throwing light up from below must be adopted. As simple a stage as any is to cut a block of some heavy wood as

shown in figure 2. A piece of clear glass is to be placed across the opening, and held in place by being let into the wood. Below this a bit of looking-glass should be so hung that it may be placed at any desired angle. For dissecting, some needles fixed in wooden handles, a small and very sharp knife, and a delicate pair of tweezers, will be required.



Fig. 2.—STAGE.

We know of one who has acquired a botanical reputation who for a long time continued his investigations with an apparatus as simple and rude as that we have described.

The Club-Root in Cabbages.

The cabbage, as well as the cauliflower and the rest of its immediate relatives, and also the turnip, are liable to a disease which has received the names of Club root, Clump-foot, Ambury, Hanbury, and when it occurs in turnips, Fingers and Toes. In England, the term Ambury is most generally used to designate this trouble, while in this country it is commonly called Club-root. This disease is one of the greatest difficulties with which the cabbage grower has to contend. Writers upon the subject, both here and abroad, attribute it to a small insect, which they designate by the indefinite name of "the weevil." In the cabbage the trouble often makes its appearance in the seed-bed, a small, gall-like excrecence being found on the stem near the root. This contains a small maggot which goes on eating its way into the stem, and as it progresses, the excrecence increases in size, until it presents a form like that given in the engraving, which is taken from a specimen sent us by C. L. Parker, N. C. The maggot eats its way out, the swelling soon begins to decay, and the already sickly plant dies. It has been stated that this disease does not occur in soils containing plenty of lime, while this is contradicted by others. It is pretty well established that the kind of manure has not, as has been alleged, anything to do with the trouble. The principal point is to know the habits of the insect that causes the mischief, its time of appearing, etc. If the attack is made only on the young plant in the seed-bed, then we shall know how to fight it. If plants which already contain the egg or maggot are set out, it makes but little difference whether they are put in a soil containing



CLUB-ROOTED CABBAGE.

an abundance of lime, or in one deficient in this constituent, the mischief having already been done. If the plant is liable to attack at any time during its growth, then lime may prove a preventive. One English writer thinks that the trouble begins in the seed-bed, and recommends transplanting the plants before the final setting

out. At this transplanting the roots are to be examined, and if any excrecence is found, it is to be cut off and the plant will soon recover. Among the remedies proposed are lime, charcoal, soot, and dry clay; these are to be sprinkled abundantly over the seed-bed, except the charcoal, which is to be placed upon it in a coating half an inch thick. The subject is one which needs careful study by intelligent observers.

STARTING STRAWBERRIES IN POTS.—This plan is gaining favor among cultivators. Small pots filled with good earth are sunk in the beds under the runners, and when the young plant has become well rooted, it is separated from the parent plant. This plan allows planting to be done at almost any time, as the plant may be turned out of the pot without disturbing it.

Notes on Strawberries.

Each year brings its quota of new seedlings, and the present one is no exception. In the eyes of the originators of some of these new plants—many of them hardly merit the name of new varieties—their productions have a greater merit than any heretofore known, and they expect others to see the fruit in the same light. Other patient experimenters are willing to wait for results, and try again and again, until they feel that they have something worthy the attention of pomologists. The ease with which strawberries are raised from seed, and the short time required to obtain results, has increased the number of seedlings within a few years, at a fearful rate. Many so-called new berries are so much like older ones that it is impossible to remember any distinguishing characters about them. Our catalogues become filled with names without any really distinct fruits belonging to them. No one should exhibit, much less offer for sale, a strawberry, unless he can show that in some respects it is superior to the varieties already in cultivation. Some growers of seedlings have strange notions of the possibilities in fertilizing, and we are often told that such a berry is from the Wilson, for instance, crossed by two or three others. Now, one seed of the many which a strawberry contains can only be fertilized by the pollen of one other berry. If the pollen of two or more other varieties be applied, that of one only will be effective. We give notes of some of the newer sorts that have come under our notice during the season just past.

BOYDEN'S No. 30.—This variety is a seedling by Seth Boyden, the originator of the Agriculturist strawberry. It was exhibited last year by Mr. B., and this year has been tested by several others. The vine is of remarkable size and vigor of foliage, and the fruit is probably larger than that of any other variety. The color is of a fine scarlet, and the berries are of a good conical form, and of moderate firmness. Flavor not high, but pleasant. The fruit often measures six inches in circumference, and retains a good shape, not often seen in large berries.

BLACK DEFTANCE.—This is a seedling by Mr. E. W. Durand, who produced Durand's Seedling. It is a good-sized, conical berry, somewhat disposed to coxcomb. The color is very dark crimson, reminding one of that of the old Black Prince; solid, and remarkably juicy; flavor very sprightly and rich, without too much acidity. This variety received the premium at the N. J. State Exhibition, as the best new seedling. Mr. D. presented six other seedlings, viz.: Regulator, Glossy Cone, Duke, New Jersey, Luxuriant, and Brilliant. Of these the commit-

tee considered two worthy of special notice: the

LUXURIANT.—A large, flattened, globose fruit, very uniform in shape and size, of a very good flavor, and remarkably sweet; and the

NEW JERSEY.—A crimson, conical, white-fleshed and showy fruit of very good quality.

LADY OF THE LAKE.—A new seedling by J. Scott, of Brighton, Mass. A short-conical fruit, of good size; scarlet, inclining to crimson; moderately firm, sweet, and of fair flavor. Some of our Massachusetts friends think that in this fruit will be found all the good qualities of the Wilson's Albany without its objectionable acidity.

WILDER'S No. 13.—A conical berry of excellent shape, and remarkably uniform in size. It is not among the largest, but large enough. The surface is firm, and of a brilliant scarlet, presenting that polished appearance so noticeable in the *Triomphe de Gand* and *La Constante*. Flavor remarkably delicate and pleasing. This is the result of years of experiment, and the one among thousands of seedlings considered by its originator as combining the most desirable qualities. A cross between *La Constante* and *Hovey's* seedling. We hope that Col. Wilder will accede to the wishes of his pomological friends, and allow this excellent and handsome fruit which cost him so much labor to produce to bear his distinguished name.

ROMEY'S SEEDLING.—This new variety, which we noticed last year, has appeared again at the various shows. The plants we have seen at the exhibitions, said to be of field culture, were abundantly fruitful. The fruit is much like the *Triomphe de Gand*, but it is claimed to be better, more hardy, and more productive. If such is the case, it will soon become popular without the use of extravagant advertisements.

BARNES' SEEDLING proves to be an excellent market fruit. It has been exhibited from Ten Eyck Bros., Monmouth Co., N. J., by S. B. Conover, in packages taken from a lot sent to market, and attracted much attention by its large size, firmness, and general good qualities.

CREMONT.—This old variety is now so rare as to have all the interest of a new one. It originated in Louisiana, and had its day of popularity. It ranks among the large varieties, and is regarded as particularly valuable for forcing.

MAL-FORMED FRUITS.—Every year we have more or less specimens of mal-formed fruits sent to us. These are often interesting, but it is not always convenient for us to place them on record. A common departure from the usual manner of growth is the complete union of two or more fruits, as we have seen in the cases of cherries, cucumbers, melons, apples, and especially tomatoes. Another freak is the production of one fruit within another. A similar thing is often seen in roses, when a bud is produced in the center of a flower, and

sometimes another bud from the center of the second flower. Mr. W. S. Gates, of Erie Co., N. Y., sent us a specimen of a young pear in which this state of things is plainly shown, as seen in the engraving. The end of the flower

stalk which usually terminates in the base of the flower kept on growing, and produced another flower above the first one, and the fruits resulting from the two became consolidated. The foreign journals have within the past year figured a number of similar cases.



CALLICARPA AMERICANA.

Shrubs with Showy Berries—Callicarpas.

Our natural autumn landscape is rich enough with the many tints of the ripened foliage. We can add to the charm of autumn in our gardens and grounds by the use of those trees and shrubs which bear showy fruit. In planting for summer effects we should not forget those of the later season, and in all places where shrubs are grown at all, some of those bearing bright berries should be introduced. What is more brilliant than a Burning-bush (*Euonymus*), or a Black Alder (*Ilex verticillata*), when lighted by a declining October sun? Red berries we have in abundance, and the Snowberry affords us a pure white. We wish to call attention to a quite neglected shrub which gives us an unusual color, a rich purple. The *Callicarpa* of our Southern States (*C. Americana*), is found from Virginia southward; it is a graceful shrub three or four feet high, which bears clusters of inconspicuous flowers in the axils of the leaves. In the autumn these fruits assume a most beautiful violet purple color, and make the shrub highly ornamental. The engraving shows a branch of half the natural size. From the color of the fruit, the shrub is called at the South the French Mulberry. It is not, however, related to the Mulberry, but belongs to the Verberna Family. The name, *Callicarpa*, is from the Greek, signifying beautiful fruit. A Japanese and a Chinese species are in cultivation. The *Callicarpas* succeed in any rich garden soil, and late in the season prove to be very attractive.

Varieties Produced by Pruning.

The Gardeners' Chronicle (London), gives an abstract of a paper read before the Linnean Society by Mr. B. Clarke, on the production of varieties by pruning. His idea is that the modifications produced by pruning are in a degree perpetuated by seed, and that by constantly pruning the offspring of such plants in the same way a variety or race may ultimately be established. He suggests Indian corn as a suitable subject for experiment, and publishes the following suggestions for those Americans who wish to try it. The results, whether confirming Mr. Clarke's views or not, would be interesting, and doubtless some of our readers will feel disposed to experiment. We do not look for any present increase of the corn crop from this process. We have not tested what can be done by selection of seed from the corn as it now grows. "The whole of the male flowers are to be cut off by cutting the stem across, a week or fortnight before the first flowers would begin to open, and the female left to be fertilized by other plants close at hand; this would, if repeated three years, it may be expected, produce a variety having only half the usual quantity of male flowers; and if so, there would be a proportionate increase of flowers on the lower part of the stem, which it may be confidently expected would be female, *i. e.*, an increase in the number of spikes of females, or cobs, as they are called when matured. If the plants left for the purpose of effecting fertilization had the upper half, or two-thirds of the male inflorescence removed before the flowers opened, the variety, if produced, would take a shorter time by a year or two. One plant having all the male flowers removed, placed between two having the upper half or two-thirds of them removed, would, it is believed, be the better way of making the experiment in the first place. If the male flowers were removed very early by splitting the sheathing leaves open, the experiment might perhaps be less successful as regards utility, in consequence of the growth of the plant being checked; but varieties departing further from the original type might be expected. In one of the plants so treated, the upper spike of female flowers produced a quantity of male flowers at its apex. Supposing, then, that the increase of female flowers amounted to only one-fifth, this would be, for the United States alone, an increase of produce amounting in value to more than \$100,000,000 per annum."

BLACKBERRIES AND RASPBERRIES.—Some one writes to ask why these fruits so unlike in some respects are both called *Rubus* by botanists. The difference in the two is not so great as it appears. The fruit, as we term it, of both is not a simple fruit, but a collection of fruits. The grains of which the berries are made up is each a distinct fruit, the result of a distinct pistil. Each grain is in structure like a minute plum. The grains in the raspberry cohere slightly to one another, but when ripe they have a very slight attachment to the end of the stem on which they are placed—receptacle, as it is called,—and the mass slips off, leaving the receptacle as in the engraving. In the blackberry the grains adhere closely to the receptacle, which becomes more or less juicy and eatable.



THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Sea-side Fare—The Crab.

Though related to the lobster, the crab is a very different looking animal, and at first sight the points of resemblance are not very manifest. The crab seems to be all body, while in the lobster that part popularly called the "tail" predominates. In order to represent the crab fairly, we give two

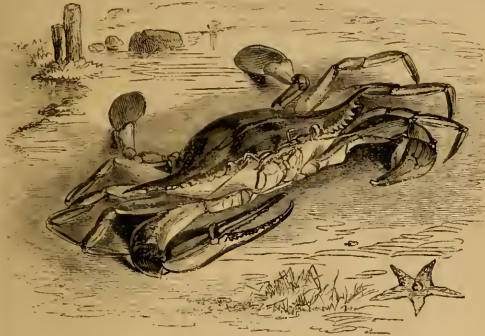


Fig. 1.—EDIBLE CRAB, ONE-THIRD SIZE.

engravings, one showing the upper side, and the other the lower side. Viewed from above, fig. 1, we see that which corresponds to the body part of the lobster, with the mouth and eyes in the center of the rounded edge. The sides of this portion end in two sharp points. Turning the crab over, we see in fig. 2, how the legs are attached. The two forward ones are, as in the lobster, enlarged to form claws or pincers, while the rear pair are thin and broad, to aid the animal in swimming, and are called "flippers." The part corresponding to the "tail" of the lobster is very small and inconspicuous in the crab, and is closely bent under the body, as seen in the engraving. It has much the appearance of the "tuck" of a pocket-book. In the female, the eggs are carried under this "apron." Crabs are caught in shallow water by means of nets, and in deep water by baiting a net stretched over a hoop with meat, which is quite as good for this purpose if it has passed the point at which it is fit for food. Sometimes a long line is set, with bait placed at intervals, and the fishermen pass along the line in a boat, and remove the crabs that have taken hold by means of a hand-net. When taken from the water, the crab is of a dull olive green, with some blue about the claws; it is very lively and pugnacious, and capable of giving a severe nip with the claws. Taken up by the flippers, or by the portion between them, the animal is unable to inflict injury when handled. The crab may be regarded as a delicacy, or luxury, rather than an article of substantial food. It is more tenacious of life than the lobster, and will live for a number of days in moist sea-weed. It is cooked by being plunged into boiling salted water, and after cooking for twenty minutes, is taken up and cooled, when it is ready to be eaten. The boiling converts the olive coloring of the shell to a bright scarlet, while the white portions become still whiter. To eat the crab requires some patience, and a hungry man had better take some other food, and pick at the crab after his hunger is mainly satisfied. In eating the crab, the claws are removed and cracked, and afford a nice bit. The legs are generally rejected, though some like to munch them for the little meat they contain. By a pull, placing the thumbs at the mouth, the upper shell is separated from the lower portion, which contains the meat. The gills, some fringe-like, unattractive

looking bodies, are removed, and then the remaining part is broken up by the fingers. The meat is found enclosed in tough, elastic membranes, which answer to the crab for bones, and has to be picked out. When served in the rough (*au naturel*), the meat is eaten as it is picked out. When crabs are served at the table, the meat is carefully picked out, and with the addition of the "coral" (spawn) from the female, as well as the yellow fat, chopped and dressed with whatever seasoning may be fancied—oil, vinegar, mustard, pepper, etc.,—and then filled into the upper shell, which has been properly cleaned.

Another way is, to pick out the meat as above, warm it up in a saucepan with butter, bread crumbs, and seasoning; fill the shells and put bread crumbs over, then place for a few minutes in a hot oven until of a good brown, and serve hot.

SOFT-SHELLED CRABS are among the high-priced delicacies found in our city markets and restaurants. The crab, enclosed in its firm coat, cannot increase in size, so in the spring of the year it manages to shed its shell completely, claws and all, even divesting itself of stomach and other interior portions. In this condition, it is a poor, defenceless thing, covered only by a tender skin, and being quite incapable of offering the least resistance to an enemy, it conceals itself in a hole or under some protection. Shore people tell us that at this season they always find a hard crab ready to act as a defender of the soft-shelled one. During this defenceless condition the animal makes its growth, the shell gradually hardens, and it comes out a new edition, "enlarged and corrected." It is in their soft-shelled condition that the crabs possess their greatest value, and the trade in them in the season is of considerable magnitude. The softer the crab, the more valuable it is; in a few

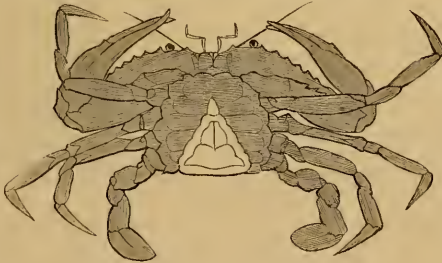


Fig. 2.—UNDER SIDE OF EDIBLE CRAB.

days after shedding, the skin becomes tough, and it is known as a "leather-back." In the New York market soft-shelled crabs seldom sell for less than one dollar a dozen, and often higher. Like the others, they are always cooked alive. The crab is first dipped in beaten egg, then covered with powdered cracker, after which it is put, with all the cracker that will adhere, into an abundance of hot fat. The crab dies instantly, and is cooked until the cracker becomes of a good brown. Good either hot or cold. In this state all of the animal is eaten, except some tough portions about the mouth. Several other species of crab are found along our coast; these are very interesting to the naturalist, but few of them are of value as food. A kind called the "stone crab" is often caught in the nets of the fishermen in winter, and kept in a "ear" until it sheds its shell, when it is eaten. A very small crab is found as a guest of the oyster, enclosed within its shells. These crabs are about the size of large spiders, and resemble them somewhat. The oystermen save them and sell them to those who are fond of them stewed like oysters and eaten entire.

Household Talks.

BY AUNT HATTIE.

I have just been bottling the ginger beer that I made yesterday. We are all fond of it and find it very refreshing this sultry weather. It is made as follows: Pour into a vessel upon the fire 2 gallons of spring water. While it is coming to a boil, mix well together 2 lbs. of white sugar, 2 ounces of bruised ginger, 2 ounces of cream of tartar, the grated rind of one and the juice of two lemons. As soon as the water boils, stir in the mixture, and let it simmer for twenty minutes or half an hour. Set to cool in a large crock, and when nearly cold, spread a small piece of bread with a little good yeast, and place to float on the surface of the beer. Bottle the next day, securing the cork firmly. Only good strong bottles should be used. This is rather an extravagant luxury for a large family, and sometimes I reduce the expense by using less sugar, and a little cream of tartar, but my reputation for making excellent ginger beer suffers in consequence.

My plums look delicious, certainly. I pride myself on my plum preserve. There is a great difference between the unbroken luscious fruit so temptingly surrounded by its natural juice, as I make it, and the brown, burnt looking mass of jam I sometimes find at the tables of some of my friends. The large blue plum and greengages I generally bottle. Damsons, when done up lb. for lb., will keep perfectly in crocks or jars, and as they require nearly or quite that amount of sugar to make them palatable, I prefer to do them up in this way, as I can always find plenty of fruits and vegetables to fill all the self-sealing bottles I have. My method, however, of extracting the juice is the same in all cases. Procure a jar or crock that will go into the oven. Proportion the sugar to be used, wipe and stem the fruit. Place a layer on the bottom of the vessel and sprinkle well with some of the sugar, another layer of plums and sugar, until the crock is full. Cover and place in a moderately heated oven, allowing them to remain for ten or twelve hours. It will do no harm to take the jar out occasionally, if the oven is needed or should be too hot. I usually put mine in about tea time, and by the next day they are ready for the final doing up. Separate juice and plums by a colander, put the juice into a brass or porcelain kettle, (on no account use a tin or iron, as the color will be spoiled), adding the sugar not used the evening before, and place upon the stove. If I am using the blue plum or greengage, as soon as the syrup has well boiled I put in the fruit, and when it boils perfectly, bottle and immediately put on the lid securely. With damsons the syrup should be simmered and skimmed until no more scum will rise; then the fruit should be added, and the whole boiled slowly for thirty or forty minutes, when they may be poured into small jars or crocks as convenient.

Black currant jam may be made in this way; this fruit does not require quite so much sugar however. The jam is excellent for colds, and some persons are fond of it in tarts or as a table sweetmeat.

We use so much sponge and rich cake that for some time I have been thinking that I must adopt a cheaper kind for every day use, both because eggs and butter are so dear, and because I think that a plainer kind would be far healthier for us, the children especially. Last baking day I tried the experiment, and made a very palatable cake from the cheapest materials. Even Edward, who is rather fastidious, at some of it, and when asked for an opinion, said it would do. Place two teacups of brown sugar in the cake bowl, with one teacup of lard and a half teacup of caraway seeds. After mixing to a foam, add two teacups of sour milk, and stir well again; sift with the flour 1 tablespoonful of baking powder; about 4 teacups of flour may be needed, perhaps 5. When the flour is well blended in, add 1 teaspoonful of soda previously dissolved in a little water. Bake in a well-larded tin for at least an hour in a moderate oven.

The peach season will soon be at its height, and I

have no doubt that I shall enjoy the preserving and pickling processes very much. I always do. An excellent housekeeper, and one who has always been ready to adopt any reasonable expedient for saving time or labor in the household, gave me the following recipe for skinning peaches. I can assure you, that if the directions are followed you will be able to remove the skins of your peaches pleasantly and expeditiously. Place in an iron kettle two quarts of good, sweet, fresh, wood ashes (not coal ashes) cover with four quarts of soft water, and let it boil for a few minutes. Put in a dozen or so of peaches and keep the pot boiling; about 20 moderately and take out the peaches, throwing them immediately into a pail of cold water. Take one in your hand and with the thumb gently remove the skin. It will slip off almost without this aid, leaving a round, beautiful ball in your hand; pass this to another pail of water, from which they may be halved, stoned, or quartered, as desired. If the lye fails to effect the skin, the ashes are not good, or it is not strong enough, and more ashes should be added. Remember that wood ashes only should be used. The peaches should on no account remain in the boiling lye long enough to cook them over so slightly. The business of bottling peaches is so simple that I hesitate to give directions, yet I can but remember that many housekeepers signally and positively fail to have their fruit keep. I have bottled peaches for the last seven years, some with and some without sugar, and never in that time have had a single bottle to ferment, mold on the top, or turn musty. A bottle or two of strawberries may have molded—occasionally some of them have turned watery—and at one time six bottles of blackberries fermented, and of course popped, but peaches have always been an inviolable success with me. The secret of bottling fruit successfully is not in the quantity of sugar used, not the absence of water, or in the length of time boiled,—all of which were actual requirements in the old-fashioned manner of preserving,—but the secret lies in there being no germ of fermentation left undestroyed in the fruit itself, and in the actual expulsion and exclusion of the air. Boiling the fruit expands it, and to make room for the expansion the air must be expelled, and hermetically sealing the bottle while the contents are in this heated and expanded state precludes the possibility of the air again entering while the bottle and fruit are cooling.—Yes, you say, that may be logical, but I fail to see through your explanation. Well, then, never mind the science, but accept the recipe. When a quantity of peaches are ready, prepare your bottles by putting them into warm water to season them. Place upon the stove in a clean porcelain or brass kettle, two quarts of water and perhaps a pound of white sugar, or sweeten to any extent desired. When boiling, put in a quantity of peaches either whole or in halves, and the moment they boil positively all throughout, with a fork take out a peach at a time and fill one bottle, being careful not to crush or bruise them; then with a hot teaspoon fill up to the brim of the bottle with some of the boiling syrup, and seal immediately. I generally place each bottle on a tin plate by the side of the kettle and allow it to stand there until filled and sealed. Care should be taken to put into the kettle as nearly as possible a quantity of fruit proportionate to one or two or three bottles, as it is desirable not to renew the kettle while any fruit remains in the syrup, as they will boil too much and the syrup will not be clear. If one or two should be left over, remove to a dish each time, and when the others are done, place these in the kettle, give them a boil up, and bottle by themselves or have them for tea. As the syrup is exhausted in the kettle add more water and sugar. I always endeavor to have a kettle of boiling water on the back of the stove, and using this I do not have to wait long for the syrup to boil. Fourteen ordinary sized peaches halved will be sufficient for a quart bottle, and ten where the stones are not removed,

a large teaspoonful of meal. Add two tablespoonfuls of sugar and one of butter, and spice to taste. It is very much improved for some tastes by slicing up five or six apples. Bake two hours or longer. It was customary to bake it all night with the brown bread in a brick oven.

Fly-Time.

Next to "dust," flies are probably the careful housekeeper's greatest annoyance. Those we have must be direct descendants of those of Egypt, for they are great plagues. The common house-fly breeds in manure, and is different from the one which deposits its eggs in meat. At the close of the warm season enough conceal themselves in cracks and crannies to continue the race. We are sometimes asked how to destroy them. Unless they are kept out of the house, there is but little use in attempting to destroy them. It is an old saying "For every one killed a dozen will come to his funeral." Most of the destructive agents depend upon their attractiveness, and are quite sure to draw as many as they kill. Leaving out of question the various traps, home-made and otherwise, we notice some of the other fly destroyers in use. An article is sold at the drug stores and elsewhere under the name of Cobalt and Fly-powder. This is mixed with sweetened water and set about in plates. It will kill flies—and human beings also. *Don't touch it.* There is no Cobalt about it; it is only crude metallic arsenic ground to powder, and is a deadly poison. There have been lives enough lost already through the use of this dangerous stuff sold under a false name. An infusion of quassia wood, sweetened, will kill flies, if they eat it. This is harmless. We believe that some of the "fly-papers" are prepared with this. In New York, and we suppose in other large cities, the regular bug and rat destroyers sell what they call "Catch 'em Alive, Oh!" This is sheets of paper smeared with a mixture of resin and some fatty matter, to make a sticky coating much like a freshly varnished surface. If a fly alights upon this he is held fast by his feet and struggles until death comes to his relief. There are other fly-destroying devices, but these will do as examples, as we do not believe in any of them. The only way to manage with flies is to keep them out. All rooms when not in use should be kept perfectly dark in fly-time, and those in constant use be provided with screens to both windows and doors. These are frames upon which is stretched wire cloth, or the less expensive mosquito netting. This is no little trouble, and freedom from flies is obtained at considerable sacrifice of one's own freedom of motion. To us there is a sense of confinement in rooms provided with screens like these, and we prefer open windows and free air, even if we must have the flies along with them. The number of flies will be much lessened if great care be taken to keep all sweets and everything attractive to them carefully covered up and out of their reach. Wherever there is anything out of doors that attracts flies, it is as good as a warning from the Sanitary Inspector that it should be removed.

The Cooking of Vegetables.

It is astonishing, nay lamentable, to observe how little variety in the way of vegetables is enjoyed by farmers' families. We are reminded of this by a letter from Mrs. A. W., who is determined to have a greater variety in her "garden patch." She finds upon looking over our garden hints that there are many things that she knew nothing about. Among these are cauliflower, egg plant, salsify, spinach, okra, martynia, etc. The writer need not ask us "not to smile at her ignorance," for there are thousands all over the country who never even saw these things, much less have them as a part of their daily food. The *Agriculturist* has for years been striving to make the farmer's home more pleasant, and one of the ways of doing this is to advocate a greater variety of wholesome food. Our correspondent complains that, while she can learn from our pages where to get the seeds and how to cultivate the plants, she has no instructions how to

prepare them for the table. Perhaps we have said less about cooking vegetables than we ought, and we are always glad to have our household friends indicate the kind of information they want. It will be impracticable to dispose of our correspondent's list in a single article, so we will begin with the simplest—and we had almost said the best—

THE CAULIFLOWER—and what is said about this applies to broccoli, which is much like it, but a harder plant, in which the "head," or eatable portion, is green or purplish, instead of white. Some boil the cauliflower whole, but we prefer to divide it into several pieces, as it cooks more evenly, and also allows one to ascertain if any insect or slug has secreted itself within. Wash the head, and put it into a pot of boiling water that has been slightly salted, and let it boil until the stem and becomes soft. Remove with a skimmer, as it is too tender to take up with a fork, place upon a dish, and pour over a dressing of drawn butter—the simple sauce made with butter, flour, and water, and that's all there is of it, except to serve it. It is no more trouble than cabbage, but vastly more delicate to the taste and digestible in the stomach. Many eat it just as served, with the butter dressing, while others prefer to use vinegar, as with cabbage. To spoil cauliflower, boil it with meat.

SPINACH.—We gave directions a few years ago, and briefly repeat. One way is to put it into water (boiling, of course), cook until done, take up, drain, and serve. In short, treat it like any other "greens." An improvement on this is to take up the spinach when done, chop it, and warm it with a plenty of butter, and serve. To have spinach at its best, it should be cooked in a very little water. Wash, and place in a saucepan with only the water that adheres to the leaves, add a lump of butter, and stew gently, with the pan closely covered, until tender. Take out, chop fine, and return to the saucepan with more butter—no matter how much, hardly, for spinach will allow of the use of a large quantity, if one has it to spare. Seasoning of salt and pepper may be added—some use nutmeg—heat up again, and serve. It is very common to garnish or ornament the dish with slices of cold boiled eggs. Other of the less known vegetables will be treated of at another time.

Recipes for Dyeing Carpet Warp.

Miss "E.," Erie Co., N. Y., sends the following recipes for dyeing carpet warp, which she says have been well tested. From what we know of dyeing, the directions seem practical. It should be borne in mind that the material when wet always looks darker than it will when dry, and in order to judge whether the desired shade is obtained, it is necessary to wring out a small portion quite dry before deciding that the shade is deep enough. After the material is dried, it should be thoroughly rinsed in an abundance of soft water until no more color is imparted to the water.

Green.—For three pounds of warp, take one pound of fustic, one half pound of logwood chips, a piece of blue vitriol the size of a hickory nut, and three pails of water; boil one hour.

Purple.—For fifteen pounds of warp take four pounds logwood chips; boil them in two pails of water. Dissolve one pound alum in a pail of hot water; pour the alum water to that containing the logwood, and boil your cotton in it one hour.

Yellow.—For five pounds of cotton, dissolve eight oz. sugar of lead in four qts. of warm water, and dissolve five oz. bichromate of potash in three qts. of warm water. Put the cotton in the lead water first, wring it out and put it in the bichromate of potash water; continue until you have the shade you wish.

Pink.—For five pounds of cotton, take two pounds of Nicaragua or Red wood, four of solution of tin; boil the wood an hour in six qts. of water. Pour the dye into a tub and add the solution of tin, put in your cotton, let it stand five minutes, and you will have a nice color. [The solution of tin may be had of the druggists under the name of the chloride or muriate of tin.—Ens.]

Indian Baked Pudding.—Mrs. II., Terre Haute, Ind. This institution of Yankee land is prepared by boiling a quart of milk and stirring in slowly

BOYS & GIRLS' COLUMNS.

Our New Policemen.

They are wily, sly little fellows, not so big as "Tom Thumb," but they are the most expert thief takers in the city. They are dressed in a neat uniform of gray and brown, each with feathers in his cap, and armed with a sharp instrument formed something like a pair of nippers, with which they seize mammals, and they seldom fail to make a capture when once they give chase. Our parks, especially, have for years been infested with hordes of lawless characters, that defaced the public ornaments, disgusted the people with their vile practices, and made themselves an intolerable nuisance. Scarcely a tree or shrub was left unharmed, the walks were disfigured, and grasses in their vicinity seldom escaped being pounced upon by one or more of the uncivilly tribe. Many plans were tried to repel and destroy them. Cuming traps were set to catch them; poisonous mixtures were prepared to mix with their food, and rewards were given for their capture; still they seemed to thrive and increase. At last, some one suggested that a family named Sparrow lived in England, noted for their success in dealing with such ugly customers, and some of them were induced to emigrate here and practice their profession. Their success is most gratifying. These pests, the Millers, Moths, Canker-worms, Caterpillars, Measur worms, etc., as these thieves were named, are rapidly disappearing, and the new policemen are pelted by every body. Commodions houses have been put up for them, the children divide their bread and cake with these friends, and by the help of these and other benefactors there is a prospect that the shade trees of our cities will hereafter be ornaments instead of wormeries. Now the next time you go out to try your skill as a marksman, please don't murder any of our friends who are trying their hand at theft catelining in your neighborhood. Otherwise, may the whole brood of unclean and rapacious insects and vermin torment you by day and haunt you by night, until you are reclaimed from thoughtlessness and ingratitude.

Ways of Getting a Living—III.



TRY YOUR WEIGHT, SIR?

The man with the weighing machine is well known in the neighborhood of New York, and some other large cities. He may be found wherever a large number of people gather, especially on any holiday occasion. His apparatus is usually a frame of three upright poles, with a spring balance hung from the top, and a chair swung from the balance, for the convenience of customers. It is amusing to notice that in most cases people weigh more on these machines than when standing on Fairbanks' Standard Scales. The proprietor of the establishment knows something of human nature. Most persons like to weigh well, in body as well as character. We have seen a man pull down two hundred pounds on the scales, and get off with an air that said, "There's a feat for you." This man looked pleased when their weight was given at five to ten pounds more than they expected. Thus the operator worked upon the vanity of his customers and sent them off well pleased with themselves. In this, as in many other ways of getting a living, curiosity is principally appealed to, and there is enough of it in every large community to enable those who gratify it to "turn a penny" often, and thus gain a livelihood.

New Insect.—"Mother," exclaimed an affected young lady, just home from boarding school, "mother, here is a grammatical error in the Bible!" "Law sakes!" replied the old lady, adjusting her spectacles, "Kill it: kill it right off, for I do believe it's the pesky thing that's been eatin' up all the bookmarks."



Curiosities at the Museum.

Among the curiosities exhibited at Barnum's Museum before its destruction by fire were many things which a casual observer would not be likely to notice. Our artist has sketched a few of these for the amusement of the boys and girls who have eyes sharp enough to see what can be found by looking carefully. If the curious figure behind the visitor in the picture could have been kept there, its exhibition might have made a fortune for Barnum.

Pleasant Recollections.

"Uncle Jim" writes to the *American Agriculturist*: "I am yet a young man, and it seems but yesterday when I was raising my little crop. I well remember how father and mother were initiated in the cultivation, gathering, and marketing of the same, and what an interest they took in advising me so as to prevent a failure. Then they pointed out a place where I could loan my money to a good reliable man, and receive interest at the rate of six per cent per annum. A note was given, and how carefully it was stored away among my treasures! At the appointed time I received all the principal and the interest, and at the suggestion made by mother I bought a young colt. That colt was well cared for, and when grown, what a handsome price it brought! Oh, I was rich enough! 'But no,' said father, 'if you buy a lot,' showing where it was, 'some day you can put a house on it, and then you will have a home of your own.' New aspirations flitted o'er my mind; the lot was purchased, and strange to say, since I began this epistle, a little boy entered and paid me a month's rent, an income on this same investment. And now, upon the same farm, I too am raising a boy who is receiving encouragement in a like manner, and to see how he is striving to outstrip me repays me for all my trouble. A finer house, a finer lot, are his aspirations, and the chances are for his success. This little boy, who is twelve years old, has attended to his horse, and helped milk three cows, and carried one gallon of milk one half mile distant each day, besides attending school and receiving the highest percentage for good scholarship. Farm life for him will be among the cherished memories. Two more subscribers to the list previously sent you are monitors of his perseverance."

Answers to Problems and Puzzles.

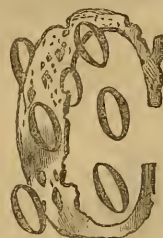
The following are the answers to the puzzles, etc., in the July number, page 265. No. 310. *Metagram*.—Zone, Bone, Tone, None. No. 311. *Illustrated Rebus*.—Quotation from Pope's Essay on Man.—2 P R in ce apples in hu man gnat ewer reins elf love two urge, rea sun too rest rain: or, Two principles in human nature reign: self-love to urge, and reason to restrain. No. 312. *Mathematical Problem*.—2,001,300,831+ farms of 300 acres each. No. 313. *Conundrum*.—She has a tail in press.

The following have sent correct answers to puzzles previously published. Eva Gray, Henry A. Drury, Levi Capp, Aaron B. Leach, Stanhope E. Leach, J. West Homer, Marins Heighton, James A. Baxter, R. Herward Millar, N. E. Melick, Charlie Weber, J. F. Webber, Clara T. Shannon, Addie A. Hadley, E. P. Washburn, J. A. Littell, Sallie J. Work, A. P. Henry, Thos. C. Hughes, "C. L. B.," H. Elliott, W. Shelly, Sarah Emma Horton.

New Puzzles to be Answered.

No. 314. *Logograph*.—(The word "logograph" means a "word net," that is, a word enclosing others like a net.) "My home is a cold, uninviting place. When taken from it, I repay the service with cheerfulness and com-

fort, and I have added to the fortunes of many. I contain 1st, the name of one of my greatest friends. 2d, Half of a beautiful bird. 3d, Everybody's favorite. 4th, The head of Benjamin Franklin. 5th, An engineer's and lady's assistant. 6th, Something often put on a drum, on a shoe, also found in barrels. What is the word?



No. 315. *Mathematical Problem*.—I have a lot of ground 100 feet long and 80 feet wide. I wish to make a ditch inside of the boundary of said lot, so that the ground taken out of the ditch may raise the balance of the surface of lot one foot higher. The breadth and depth of ditch are to be made equal; what ought they to be?

No. 316. *Picture Puzzle*.—Why does this picture represent the office of the Pope?

No. 317. *Metagram*.—A word of four letters feeds millions of human beings. Change the first letter and it warms millions. Change the first letter again and you have a wonderful performance. Another change gives a place to rest. What are the words of the metagram?



No. 318. *Puzzle Picture*. What common mathematical instrument is represented by the above figures?



No. 319. *Puzzle Picture*.—What common mode of punishment is represented in the above picture?

No. 320. *French Puzzle*.—How do these two letters, J, a, very well describe the feelings of a hungry person?

Anecdote of General Jackson.

A widow, who resided in Washington during Jackson's administration, related the following incident to an acquaintance of the writer's. "I never knew," she began, "what it was to have a care or a worry about the future while my husband lived; but he died suddenly, leaving me poor, with several small children. I tried taking boarders. Now and then a debtor would take French leave, and forget in his hurry to ask for his little bill, and thus deprive me of the profits of a whole year's labor. One inmate, however, a very stylish clerk in one of the departments, was kind enough to stay until he owed me more than five hundred dollars. He wore the finest of broadcloth, and the most expensive jewelry, and patronized me in such a grand way that I rarely had the courage to dun him. At last, the grocer nearly drove me distracted about the bill I was owing him, and I went in desperation to Mr. Jones. 'Now, really, Mrs. —,' he said, calmly looking down upon me with serene pity, 'you ought to know that this isn't the way to treat a gentleman of my standing; I—aw—fear I shall be under the necessity of leaving if I am to be annoyed about that paltry sum again.' I suppose I was a fool, but I dared not answer him, and withdrew, looking as guilty as if he had dunned me. Now, Jones often boasted at table of his intimacy with the President. He condescended to speak highly of him as a grand old hero, on cordial terms with his friend, Mr. Jones. In my distress I actually put on my bonnet and went to ask Jackson to assist me. I met with many rebuffs from porters and servants, but my courage never failed me, until, to my dismay, I found myself in the very presence of the President of the United States; then my affairs looked small enough. I felt as if I could crawl through the keyhole easier than do such an errand, with that keen look from under Mr. Jackson's brows upon me. He saw my embarrassment and—I don't know how—soon had me telling all my troubles to him as if he had been my own son. 'Dear me!' I exclaimed at last, 'I don't know how I dared come to you, but Jones professed to be on such intimate terms with Your Excellency.' 'Ah!' he said, with a twinkle in his eye; 'then I think I must send him my autograph. He will value that!' and sitting down to his desk he wrote a few scathing lines to his friend, Mr. Jones, who wore fine clothes at a poor widow's expense, and commanded him to pay me at once, or resign his clerkship, by command of—Andrew Jackson, President of the United States of America. His autograph, indeed! Why, that Andrew Jackson crossed the entire sheet in letters as big and black as a thundercloud. When I went in to pour the tea that night, I gave Mr. Jones the note, saying, 'I called on the President to-day, and he sent you this.' 'You?' as if I had been the puppy under his feet. Then in his grand way—'One of his little notes on business, probably.' But you should have seen his face before he got to that autograph; he

tried to look proud and indifferent, he tried to eat his supper, but I pitted him. He stopped after supper, laid down what money he had, humbly begged my pardon, and in a day or two brought me the whole sum. After that, all went well with me. You see, I had these words

a child who plays affectionately with its doll is cultivating a noble faculty. It is cruel to abuse dolls. They should be made to mind, but this can be done without whipping, pinching, or pulling their ears or hair. You will smile, perhaps, at the idea of cruelty to something which cannot feel; but it is cruel to yourself to indulge in cruel feelings, and try to hurt anything unnecessarily. Bad feelings will grow, and the child who begins by beating a doll will be likely to end by practising cruelty to her baby.

Filial Love Recalled.

Olaf Bager was a rich and noble merchant of Denmark, who lent immense sums of money to his king, Frederick the Second. At one time when the king was paying Bager a visit, he praised the taste and sweet smell of some preserved apricots brought upon the supper table. "Wait until the dessert," replied Bager, "I will give you some incense that will please you far better." After supper a dish was brought containing perfumed cedar chips, on which was laid a mass of papers, which the king saw was the whole of the bonds he had given Bager as security for the money the latter had lent the king, and which the king had very little hope of paying, the amount was so large. "Will your Majesty light the pile?" said Bager, quietly. The king did so, and saw his enormous debt cancelled by the flames. Bager was so rich he thought he could well afford in this way to show his love for his sovereign. But in after years misfortunes came, and Bager was reduced to absolute want. In his distress he applied to his children for help. They could have easily kept him in comfort, for in his prosperous days he had established them well in business. But they treated him badly, and were anxious to be free from him as an unwelcome burden. Bager resolved to secure their good will again, and accordingly went out among the



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DON'T WAKE THE BABY. —Drawn and Engraved for the American Agriculturist.

always in my mind.—'Come to me again, Mrs.—; the widow and the fatherless shall always find in me a friend.' I can assure you that I prized those parting words more, perhaps, than Jones did the President's autograph."

Don't Wake the Baby.

We hope every little girl large enough to read the *Agriculturist*, or to understand the pictures, has a doll to care for, to dress and undress, to feed, and soothe to sleep, to watch over and to love. She will learn by such pleasant play to do the same for younger brothers and sisters, and in time, perhaps, for her own dear children. It seems to be natural to pet something resembling a child, for all over the world children have their neckerchieves babies. The little Indian girl loves her "papoose" made of bark and moss, as much as you do your china or wax doll that has eyes which will move—when you pull the wire. This shows that there is something in the soul which is not satisfied without caring for the helpless. This feeling, like every other, will grow by using it, and

merchants with whom he had formerly traded, and soon succeeded in filling a strong box which he had made for the purpose, with enough, as he supposed, to make him comfortable. He then let it be known that he should present what might remain in the box at his death to the one of his children who should treat him best. It was surprising to see how attentive they all became; he was handsomely supported, and each one strove to show him the greatest kindness. Finally, he ended his days in peace. Just before his death he called his "dutiful" children about him, and declared that all had been so kind, he could not decide to whom to leave his box, and therefore directed that its contents should be equally divided among them. He was buried with much display, and immediately after the funeral the box of treasure was opened, and found to be full of common stones! This was certainly a proper reward for their selfish kindness.

CHILD'S IDEA.—While recently crossing the ferry, we heard a little three-year-old exclaim, as she saw a sailboat, "O mamma! there's a boat with a bonnet on!"

(Advertisements on this Page \$2.50 per Line of Space).

The Spirit of the Times.

OFFICE OF WILKES'S SPIRIT,

New York, June 11th, 1893.

WILKES'S SPIRIT OF THE TIMES will this week resume its original title, and appear as

THE SPIRIT OF THE TIMES.

Its publication was originally made under this title, nearly fifty years ago, and it ran under this title for about thirty years, acquiring a standard position and great prosperity. Its title was then changed to WILKES'S SPIRIT, in compliance to the noble man who had been its founder. At the death of Mr. Porter in 1838, its name was changed to WILKES'S SPIRIT, and now, after ten years of unoccupied prosperity, it returns to its original title, thus uniting the merit and authority of all its forms of being, and representing the sole and only recognized sporting authority of the Western hemisphere. It is but proper to add, that its present editor and the incomparable corps of writers who are now connected with it, some of whom have been attached to it for years, will remain, as heretofore, associated with its fortunes.

Editor and Proprietor of THE SPIRIT OF THE TIMES.

P. S.—THE SPIRIT OF THE TIMES is a lighted gentleman's weekly newspaper, devoted to hunting, racing, outdoor sports, literature, and the stage. Among its other features, it employs a distinguished Veterinary Professor, who answers all questions through its columns in regard to sick or injured horses or cattle, and sends prescriptions FREE! No horse owner or veterinary student should be without THE SPIRIT. Subscription, \$5.00. Single copies to be had at all the news stands.

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1,000 BUTTON-HOLE ATTACHMENT

FOR MAKING FAMILIES AND MANUFACTURERS.

THE BEST AND CHEAPEST
FAMILY SEWING MACHINE IN THE WORLD.
THE \$35 NOVELTY SEWING MACHINE.
Sold with table and complete outfit, and warranted for one year. Every family, every connoisseur should have one. Agents, male and female, wanted everywhere.
S. E. H. VANDYKE, General Agent,
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GENUINE WALTHAM WATCHES.
IN SOLID GOLD AND SILVER CASES ONLY
AND AT
EXTREMELY LOW PRICES.
Silver Hunting Watches, \$18
Gold Hunting Watches, 18 Karat Gold, \$20
Every Watch warranted by special certificate from the American Watch Company. No will and these watches by express to any place with bill to collect on delivery, and examine the purchaser's privilege to open the package and examine the watch before paying, and any watch that does not give satisfaction may be exchanged or the money will be refunded. Every one is entitled to a free descriptive Price List, which explains the different kinds with prices of each. Please state that you saw this in the Agriculturist. Address in full.

HOWARD & CO.,
No. 619 Broadway, New York.

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TOILET SOAPS

SEND NOW

for my new price list of plants, Blackberries and other small fruits, at unacceptably low prices.
Address J. H. POSTEL, name of P. O. changed to
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GEO. A. DEITZ, THE GREAT
SEED WHEAT GROWER, CHAMBERSBURG,
Pa., sends free of charge the best Seed Wheat in the world. See advertisement page 363-364.

Fort Edward Collegiate Institute.

Fall term of thirteen weeks, Sept. 3d. \$60 for board with common English. Brick buildings, sixteen teachers. Students pursue a course of Classical, Scientific, Eclectic, College-preparatory or Commercial Studies, or can select special studies. For fourteen years the best sustained Seminary for ladies and gentlemen in the State. Its students for average maturity, enterprise, and moral and Christian worth, are nowhere surpassed. For new Catalogue, address
REV. JUSTIN E. KING, D. D., Fort Edward, N. Y.

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CATALOGUE OF TULIPS, HYACINTHS,
AND OTHER HARDY BULBS,
FOR THE AUTUMN OF 1893.

Is now published, and sent free to all who apply.
Address **JAMES VICK,**
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"THE GOOD, THE TRUE AND THE BEAUTIFUL."
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IN YOUR HOUSE OR FACTORY?

We can afford to pipe your house, or pay for your fixtures, or both, and leave them in your property, if we cannot put up a machine that shall not interfere with your order and every condition. Circulars and information.
UNION GAS CO., 101 Duane, New York.

PLANCHETTE, the new parlor mystery! the wonderful little automaton that answers questions, "tells fortunes," and even discloses our secret thoughts. Now creating the most intense excitement in all the principal cities and startling people with its curious and marvellous phenomena. It makes Planchette a case no expense whatever, being made by making and planation of the mystery and constructing in **Haney's** latitudes. New, sell it all the year for very interesting buzz, Quacks, and number. Buy one today! It's a whole year!

JESSE HANEY & CO., 110 Nassau St., New York.

BODY—BRAIN—MIND—HEALTH, ITS REGENERATION AND PRESERVATION. Choice of Pursuits: "What can I do best? Can I succeed best as a Lawyer, Physician, or as a Clergyman? As a Merchant, Mechanic, or a Farmer? PARADOXICAL MY ANSWER. See "PHRENOLOGICAL JOURNAL" for July, only \$1 a year. Address
S. R. WELLS, 230 Broadway.

The Universal Clothes-Wringer, lately improved with Howell's patent double gear and chain extension, sends silver in its cost in labor and clothes. Sold everywhere. **R. C. BROWNING, General Agent,**
No. 32 Courtlandt St., New York.

PRINCE & CO'S
AUTOMATIC ORGANS
AND MELODEONS
Forty thousand are now in use
BUFFALO, N. Y. CHICAGO, ILL.

We call attention to **FERRIS & CAYWOOD'S** advertisement of the celebrated **Walter Grapes**, on page 24.

Hill's Lawn Mower.

The most complete Mower in use, invariably approved by all who have given it a trial. Orders sent to all applicants.
B. K. BLISS & SON, 31 Park Row,
SOLE AGENTS FOR NEW YORK.

Dutch Bulbous Roots.

A large and superior collection of the above, including all the leading varieties of Hyacinths, Tulips, Narcissus, Crocus, Jonquils, Lilacs, etc., etc., is now being selected, for us among the leading planters in Holland, and are expected to arrive in the United States in the early part of the autumn. Catalogue of Bulbs, beautifully illustrated, and mailed to all applicants enclosing 10 cents.
B. K. BLISS & SON, 31 Park Row,
(Old office of the Agriculturist), New York.

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Allen's (L. F.) Rural Architecture	\$1.50
Allen's (H. L.) American Farm Book	1.00
Allen's (H. L.) Diseases of Domestic Animals	1.00
Am. Agricultural Annual, 1897 & 1898, each, pa., 50c; clo.	1.00
Am. Horticultural Annual, 1897 & 1898, each, pa., 50c; clo.	1.00
American Poultry, by Dr. J. A. Warner	80c
American Rose Culture	80c
American Woods and Plants	1.00
Architecture, by Cummings & Miller	10.00
Art, Modern, by Cummings & Miller	10.00
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Bonner's Method of Making Manures	1.00
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(Advertisements on this page, \$2.00 per Agate line of space.)

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A new, first-class Grape-Nursery near St. Louis, Mo. Catalogues sent free. Apply to

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10,000

Peach Trees for sale, consisting of 16 choice varieties. Send for price list. JOHN GIBSON, Cranberry Station, Middlesex Co., N. J.

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The latest improved and best Drill. With forced even feed and no weight on horses' necks.

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A strictly first class portable Cider and Grape Mill for hand or power.

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The only standard and reliable Sorgho Machinery in the world.

Illustrated Descriptive Circulars of these and the Victor Grain Drill and Eureka Cider Mill sent free to applicants.

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Merit particular attention from Planters and Dealers; and, to those forming Clubs, special incentives are offered. Much attention is given to Vines for Grape Plaster from which the best results are being realized. 20,000 Standard and Dwarf Pears, two to five years old, straight, finely formed buds, vigorous and healthy. Currants, Raspberries, Blackberries, and Strawberry plants in large supply. Price very low. All our customers will receive it as soon as issued. Sent to others describing nursery stock upon application. Correspondence solicited.

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Orange Orange Plants, Fruit, Deciduous and Evergreen Trees, in large or small quantity. Address for price list, Mesnove, Pasce & Limes, Young America, Ill.

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Process of Refining and Deodorizing Sorghum Syrup and Sugars.

This important discovery changes the whole aspect of the Sorghum business; makes Sorghum Syrup a commercial article. Descriptive Circulars free. Address

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The Celebrated Walter Grape.

After twenty-five years experience with the present tender and late varieties, we know the Walter, now first offered, will restore confidence in grape raising in this country. It never rots. Its abundant sugar and its lusciousness on the vine. It is a great grower and bearer—the parent vine now contains 141 clusters of bloom. It is very compact in cluster at the East; this is an advantage in marketing. We have not known the foliage to miller. It succeeds in dry and very wet soils. All grapes excel in the West. It is a seedling of the Delaware, crossed with the Diana, and better than either. It ripens before Hartford Prolific, and is therefore the earliest as well as the hardiest and best variety; No. 1, one year, \$1 each in advance. Orders filled in relation, while supply lasts. No charge for packing. Send stamp for beautiful and complete vineyard plan.

FERRIS & CAYWOOD, Poughkeepsie, N. Y.

NAPOLEON III.

The highest-flavored, most productive, and best berry for amateur culture.

In growth, flavor, and productiveness, excelling

JUCUNDA.

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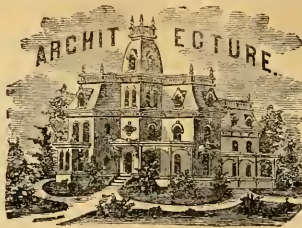
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Where the Foreign Seed Wheats are acclimated and grown for sale, near Chambersburg, Pa. 4 pounds of any variety sent post-paid for One Dollar, one head of any variety sent post-paid for 10 cents, or 20 heads of different varieties for One Dollar.



FRENCH WHITE CHAFF MEDITERRANEAN.

Per peck, \$2.00; per bushel, \$7.50. Wholesale, or Club rates: 25 bushels, \$175.00; 50 bushels, \$325.00; 100 bushels, \$500.00.

FRENCH WHITE CHAFF MEDITERRANEAN.

Bearded Wheat.—Imported from Arles, France. Acclimated four years. This Wheat I consider the best Red Wheat for general cultivation. It is the earliest, hardest, and most prolific Red Wheat that I know of, and has a very stiff straw, a large head, and the largest grain of any wheat in the country. As yet it has proved rust and weevil-proof, and yields from forty to fifty bushels per acre.

Per peck, \$2.00; per bushel, \$7.50; Wholesale, or Club rates: 25 bushels, \$175; 50 bushels, \$325.00; 100 bushels, \$500.00.

FRENCH RED CHAFF MEDITERRANEAN.

From Aix, France.—Acclimated four years. This is also a very good early Wheat. It stands the Winter well, and is very prolific. The grain is a light red or amber; is of good size, and very plump. The head is the largest of any of the Bearded Wheats. The straw is strong and stiff; not liable to lodge. It yields about forty to fifty bushels per acre on ordinary soil, and is free from rust and weevil.

Per peck, \$2.50; per bushel, \$7.50. Wholesale, or Club rates: 25 bushels, \$175.00; 50 bushels, \$325.00; 100 bushels, \$500.00.

HUNGARIAN RED MEDITERRANEAN.

Bearded.—Imported from Dantsic, Prussia. Acclimated two years. An early and prolific Red Wheat which stands the hardest winter, and stools very heavily. The head is of a good size, the grain medium and of a dark red color. It has improved both in straw and grain each year. I consider it a very good and hardy Wheat.

Per peck, \$3.00; per bushel, \$7.50; Wholesale, and Club rates: 20 bushels, \$140.00; 40 bushels, \$260.00; 60 bushels, \$360.00.

GERMAN RED.

Beardless.—From Holland. This is a smooth Wheat, with a head of good size and medium sized grain of a light red or amber color. It is hardy and prolific, free from weevil and rust, and yields about forty bushels per acre.

Per peck, \$2.00; per bushel, \$7.50. Wholesale, or Club rates: 25 bushels, \$175.00; 50 bushels, \$325.00; 100 bushels, \$500.00.

RED CHAFF MEDITERRANEAN.

Bearded.—This Wheat was imported at the same time with the White Chaff Mediterranean, and from near the same place. The only difference between the two Wheats is, that this Wheat has a dark red grain of large size; a straw slightly purple, and a red chaff. It has been yielding good crops every season; is hardy and prolific, and will stand the hardest winter. It yields about thirty-five bushels per acre.

Per peck, \$1.50; per bushel, \$5.00. Wholesale, and Club rates: 25 bushels, \$112.50; 50 bushels, \$225.00; 100 bushels, \$400.00.

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FRENCH RED CHAFF MEDITERRANEAN.

Per peck, \$2.50; per bushel, \$7.50. Wholesale, or Club rates: 25 bushels, \$175.00; 50 bushels, \$325.00; 100 bushels, \$500.00.

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FOREIGN WHEATS.

ANCONA RED.—From Prussia.—Imported this season.

SANDONICA WHITE.—From Poland.—Imported this season.

BERDENSKA.—From Russia.—Imported this season.

SAKONKA.—From Poland.—Imported this season.

SALLA.—From Saxony.—Imported this season.

SAXONY.—From Saxony.—Imported this season.

BOHEMIAN RED.—Imported this season.

BOHEMIAN WHITE.—Imported this season.

WHITE CHAFF MEDITERRANEAN.

Bearded.—This Amber Wheat was imported ten years ago from the Northern part of Italy, near the coast of the Mediterranean Sea, and has been yielding good crops every season. This Wheat is grown to New York, largely. It is a hardy and prolific Wheat, amber colored grain, of good size, and a medium sized head. It yields from thirty to thirty-five bushels per acre. It stools largely, and the straw is bright and strong; free from rust, and weevil do not trouble it.

Per peck, \$1.50; per bushel, \$5.00; Wholesale, and Club rates: 25 bushels, \$112.50; 50 bushels, \$225.00; 100 bushels, \$400.00.

ROCHESTER RED CHAFF.

Bearded.—From Rochester, New York. This wheat is somewhat similar to the Lancaster Red Mediterranean, with a more perfect and fuller head, and ripens about the same time. It makes a stiff straw, stands the most rigorous winter, and is weevil and rust-proof.

Per peck, \$1.50; per bushel, \$5.00; Wholesale, and Club rates: 25 bushels, \$112.00; 50 bushels, \$225.00; 100 bushels, \$400.00.

EGYPTIAN RED CHAFF MEDITERRANEAN.

Bearded.—This Wheat is similar to the Lancaster and Rochester, raised along the banks of the Susehano river. The head is a good size; the grain medium, and yields from thirty to thirty-five bushels per acre. In this vicinity, this variety proves late, but in some localities it is very superior and gives entire satisfaction.

Per peck, \$1.50; per bushel, \$5.00. Wholesale, or Club rates: 25 bushels, \$112.00; 50 bushels, \$225.00; 100 bushels, \$400.00.

LANCASTER RED CHAFF.

Bearded.—An early red Mediterranean Wheat. Head medium size; grain a light red, of good size. Pennsylvania farmers hold it on account of its making a crop on all kinds of soil, especially in slate or gravelly land, and its making a part of a crop in all kinds of seasons. If the best seed was taken every year for sowing, it could be improved so as to make a splendid Wheat. The yield, in this Valley, is from fifteen to thirty-five bushels per acre.

Per peck, \$1.50; per bushel, \$5.00. Wholesale, or Club rates: 25 bushels, \$112.00; 50 bushels, \$225.00; 100 bushels, \$400.00.

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ITALIAN WHITE WHEAT.

Smooth.—From Tuscany, Italy. This White Wheat will not stand our cold northern winter. I had to plow it down as it was winter-killed. Where it has been sown in this Valley it has deteriorated every year. It is one of the finest and largest White Wheats in the world, and those who live in a warm and dry climate can raise it to perfection. It will yield about 50 bushels per acre.

Per peck, \$2.00; per bushel, \$7.50.

CALIFORNIA WHITE WHEAT.

Smooth.—Originally from Chili. This is considered one of the very best White Wheats, but it needs a warm, dry climate to grow it to perfection. I plowed most of it down this season—being winter-killed. Some of it, left standing, has made fine heads of a very large size. I only offer this Wheat to those who think they can raise it, as it is one of the finest White Wheats in the world. It will not stand our wet, northern winters. Yields from fifty to sixty bushels per acre.

Per peck, \$1.50; per bushel, \$5.00.

ITALIAN RED MEDITERRANEAN.

From Tuscany.—Acclimated one year; half hardy. This is the same Wheat as that acclimated three years, and I expect to do as well.

Per peck, \$2.00; per bushel, \$7.50; Wholesale, or Club rates: 25 bushels, \$140.00; 40 bushels, \$260.00.

AMERICAN WHITE WHEAT.

Bearded.—This is a fine and hardy White Wheat, with heads and grain of good size. It originated in the northern part of Pennsylvania, where it has been doing well for eight years and hence yielding good crops.

Per peck, \$2.00; per bushel, \$6.00.

HALLETT'S ENGLISH WHITE MEDITERRANEAN.

Raised by Mr. Hallett, of Brighton, England. A white, smooth, bearded Wheat; grain very large and plump; straw strong and head large—containing from forty to eighty grains each.

Per peck, \$3.25; per bushel, \$8.00; Wholesale, per bushel, \$7.00.

HALLETT'S ENGLISH RED MEDITERRANEAN.

Smooth.—Raised from selected seed, by Mr. Hallett, of Brighton, England. Grain very large and plump, dark amber color; makes a very strong straw and very large head, containing from fifty to eighty grains each.

Per peck, \$2.75; per bushel, \$8.00; Wholesale, per bushel, \$7.00.

BLUE STEM WHEAT.

Smooth.—From North Carolina. The head is a good size; the grain white and plump; the straw stiff and of a good length. It ripens about as early as the Boughton White Wheat, and yields from thirty to forty bushels per acre. This Wheat stools very strongly, and will stand more freezing and thawing than most other varieties, as it sends out a great mass of roots. It would be a good Wheat for loose and prairie soils.

Per peck, \$1.50; per bushel, \$5.00; Wholesale, and Club rates: 25 bushels, \$112.50; 50 bushels, \$225.00; 100 bushels, \$400.00.



BOUGHTON, or TAPPANANNOCK WHITE.

good stiff straw, and is fly, weevil and rust proof. I believe this Wheat would prove hardy and prolific in any part of the United States, as a crop can be raised on any kind of soil.

Per peck, \$1.75; per bushel, \$6.00. Wholesale, or Club rates: 25 bushels, \$150.00; 50 bushels, \$300.00; 100 bushels, \$500.00.

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CHESTER WHITE HOGS FOR SALE.

ITALIAN RED MEDITERRANEAN.

Bearded—Imported from Tuscany. Acclimated three years. It is a hardy amber Wheat, with a grain of good size, and has improved each year. The head is as large as that of the French Red Chaff Mediterranean, and is very prolific. The straw is very strong and stiff, not likely to lodge, and has not been affected by rust or weevil. It yields from forty to fifty bushels per acre.

Per peck, \$2.00; per bushel, \$7.50; Wholesale, and Club rates: 25 bushels, \$175.00; 50 bushels, \$325.00; 100 bushels, \$500.00.

ROGER'S ENGLISH RED MEDITERRANEAN.

Smooth.—Raised from selected English seed. Grain large, and of an amber color; heads of a good size; straw stiff and of good height. I think it will make a good Wheat when well acclimated, as it is doing better each year.

Per peck, \$2.35; per bushel, \$8.00.

DIEML'S WHITE.

Smooth.—This variety originated in the State of New York, and comes up as fully to the requirements of Wheat growers as any Smooth White Wheat grown. It has proved uniformly hardy. The grain is white, plump, soft, and not flinty, and ripens early in the season. It is very prolific; the plant is very strong and broad-leaved; stools well, and endures the rigors of our northern winter as well as any other known variety. The grains set close to the rachis, and the glume, or chaff, lies closely, and may be called fly-proof. On good ground it will yield over forty bushels per acre.

Per peck, \$1.50; per bushel, \$5.50. Wholesale, for Club rates: 25 bushels, \$130.00; 50 bushels, \$250.00; 100 bushels, \$400.00.

BOUGHTON, or TAPPANANNOCK WHITE.

Smooth.—From Virginia. This wheat has proved one of the best White Smooth Wheats in this part of the country. It ripens early and yields from thirty to forty bushels per acre; the head and grain of good size. This Wheat, in some localities, will ripen earlier and yield better than in others. It needs a good, rich, warm, dry soil, and on such soil will repay the farmer well for sowing. When grown to perfection, I consider it one of the best White Wheats in the country.

Per peck, \$1.50; per bushel, \$5.00; Wholesale, and Club rates: 25 bushels, \$120.00; 50 bushels, \$225.00; 100 bushels, \$400.00.

WEEK'S WHITE BEARDED.

This Wheat was found in a crop of Mediterranean Wheat by Mr. WEEKS, of New York, and is believed to be a hybrid from the Soules and Mediterranean Wheat. This is the earliest bearded White Wheat I know of. It is hardy and prolific, with a hard and flinty grain, similar in size and shape to the Mediterranean; yields as high as forty-five bushels per acre. It has a

WILLOUGHY GUN SPRING AND TUBE DRILL.

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Improved all over. Apple Parer, Coring and Slicing Machines, and also Peach Parers. Manufactured by D. H. WHITE-MORE, Successor to Whitcomb & Brothers, Worcester, Mass.

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No. 81 Breckin-st., New York.

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UNIVERSAL FILTER WELL. Patented in December 1867. Drives and works well in all kinds of soil. Specialty, sand and clay, \$20 to \$30 profit per well of 25 feet. State and County Agents for sale. Address—
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NEW YORK, SEPTEMBER, 1868.

NEW SERIES—No. 260.



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begins, and is pushed as rapidly as possible. Women and children find light and pleasant work in picking the hops into boxes or bins, while the men find sufficient occupation in bringing the vines to the pickers, and taking the hops away to the drying kilns. Various forms of picking boxes are used; those of the kind shown in the engraving are of about the capacity of thirty bushels, and their contents will make about one hundred and thirty pounds when dried. Two experienced pickers will fill three or four such boxes in a day. An expert picker will take from five to ten hops at a time, close the band lightly, and by a quick pull bring them off clean. It is the duty of the foreman to see

that the hops are picked free from stems and leaves, and when the work is not done by the day, to keep an account of the quantity picked by the several hands. The hops, as fast as they accumulate, are conveyed to the kiln, one form of which is shown in the distance in the engraving, where they are dried by means of hot air. Hops, instead of being trained upon poles, are often grown upon horizontal cords or wires, a plan for which great superiority is claimed. A yard, in which the vines were trained horizontally, could not afford the artist an opportunity for such a picturesque sketch as he has given of the older and more common hop-yard, in which the vines are trained upon poles.

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AMERICAN AGRICULTURIST.

NEW-YORK, SEPTEMBER, 1868.

We approach the autumn harvests with great hope and no little solicitude. Early frosts may cut short our most important cereal crop, and greatly injure the quality of corn fodder, which is annually becoming more and more a dependence, as it is better economized. September will settle the fate of the great corn crop, and if the hopes and prayers are answered, the harvest will be abundant for home needs at any rate. The great abundance of hay, and the excellent condition in which it was gotten in over a large portion of the Atlantic States, may lead to a neglect of the corn fodder. This should not be, for the drought in England is reported as having been severe, and the hay crop so short that large orders have been filled for shipment of this article. The powerful presses, now not uncommon, make it possible to load a ship heavily with hay, which, until recently, we have never been able to do. So prices may yet rule high, and farmers may be very willing to supplement their hay with good corn fodder. Make it a rule, if hay be sold, to spend all the money for manure.

Many agricultural fairs occur this month. Too many important ones interfere with one another, being held upon the same days. Cannot this be obviated? Every fair ought to be patronized and visited, and it should be a matter of conscience with every farmer, horticulturist, and producer of anything of value, to show his best products somewhere, at the State and County fairs if possible, and with wife and children have one pleasant holiday, at least, in visiting the fair and cattle show.

Hints about Work.

September work is ordinarily not of a very pressing kind. It requires good judgment to know what should be first done of several things, all requiring attention, but, unlike the labors of the spring and summer, a few days' delay will not be certainly disastrous, or entail additional labor.

Buckwheat ought to be in full blossom over the northern half of the Union; a frost of moderate severity is destructive to all but the well-grown kernels, and may cut off half or two-thirds of the crop. The succulent stalks and leaves will furnish sap to mature a great part of the grain which has passed the bloom. If a change of weather threatens frost, it is best to cut buckwheat at any rate, and after partial drying, it should be laid up in small cocks, or gavels, bound at the top so as to shed rain, and so left until all the kernels have filled and ripened that will do so.

Corn.—The corn crop over a large portion of the Union is backward. It is folly to top it, to promote its ripening. It is not the sun on the ears that ripens corn, but the effects of light and air upon the leaves and entire plant. After the kernels are well glazed at the tips of the ears, it may pay to top the large, coarse kinds, in order to secure a better quality of fodder. We prefer, however, to cut at the ground, and stook up as soon as thoroughly glazed. The grain will ripen, the stalks make better fodder, and the heavy butts, if not used for fodder, are easily made available in the compost heap, and worth more than if left in the field.

Corn for Seed should be selected personally before the stalks are cut up. Go through the best part of the field, marking the ears on the most prolific stalks, and choosing the ears which please you best on the stalks which are of medium size and not given to suckering. Mark by a string tied around the middle of the ear. At husking time all these ears will be saved by themselves, and out of them, when the husks are stripped back, one can select the most perfect. Mark two or three times as many as you will need.

Tobacco is hopelessly damaged by a light frost. That which still stands should be cut early in the month. In hanging avoid crowding, as much as in hot weather; though as soon as the plants have partially dried, they may be moved quite near to-

gether. That cut in August may be crowded up to make more room for the rest of the crop.

Potatoes.—The death of the tops indicates the maturity of the tubers. If the rot be amongst them, we hold it better to let them rot in the ground than in the cellar or pit. Many, however, dig and market at once. If consumed before the disease makes progress, a larger portion of the crop may be thus utilized. When other work does not press, early potatoes should be dug and put in cool cellars, or in pits in perfectly dry soil.

Root Crops.—After cool weather sets in, roots make their chief growth. Weeds should be pulled or hoed up, so as not to disturb the roots. Thinning may also be done effectively. The plants removed will be relished by the stock. Carrots require that the ground between the rows should be kept loose and open, more than other roots.

Grass—Aftermath.—If a rowen crop is taken, by all means manure well after it. It often pays to cut the aftermath for the sake of removing a crop of weed seeds, like wild carrots, for instance, even though it would hardly pay to cut for hay alone.

Pasturing the Aftermath.—Nearly or quite half the feed is destroyed by the trampling of the stock. This is all avoided by tethering in the way described on page 327. If the tether is fastened to an hind leg, and the stakes moved forward six feet at a time, the droppings will be left on the fed off portion.

Seeding Down to Grass may be done any time during this month. Put the surface in good order; spread a fine compost or some guano; harrow mellow and even; pick off all the stones; sow grass seed, with clover, if you please, and roll. Grass sowing may be delayed until spring. Three pecks to a bushel of oats may be sown as a mulch. See article on Seeding Lawns in Autumn, page 333.

New Grass Land and seeded stubble should not be pastured too soon, if at all. Calves, yearlings, and weaned colts, do little harm, for they neither poach it up in rainy weather, nor pull much up by the roots, as heavier cattle are apt to do. Go over such land and cut the rig-weed, carrots, and other weeds, before the seeds are ripe. Once mowing is usually sufficient, and it is light, easy work for boys.

Wheat.—The earlier sowed, the better, as a general rule. It makes a little difference at harvest time, and but a little, but it is so much clear gain. The better tith the land is in, the better will the wheat be. An excellent compost for wheat and substitute for Peruvian guano is bone-dust and fish guano, equal parts, with two or three times as much fine manure or rotted sods. Another is bone-dust two parts, castor pomace one part, composted with manure in like manner, spread after it has undergone one good heating, and harrowed in with the grain. All manure applied directly for a grain crop should be put on as a top-dressing.

Pickles for Seed Wheat.—Smut in wheat is to a very great degree prevented by soaking the seed in a strong brine previous to sowing. The smut is a parasitic plant, which attacks and entirely destroys the head of the wheat. It propagates itself by invisible spores, which attach themselves to the grain, remain upon it, and are sown with it if not destroyed. This is proved by the fact that pickling the seed is a remedy for the disease. A strong brine is efficient; many suppose they improve its efficacy by adding blue vitriol, and others that it is essential to dry off with dry-slaked lime. In the absence of proof that the blue vitriol and lime do no good, and as the former is but a slight expense, and the use of the lime a great convenience, we advise to make a brine that will float an egg; add two pounds blue vitriol to the half barrel of brine; wet a bushel of wheat at a time, stirring it thoroughly, and skimming off the light stuff as the wheat is poured into the brine; after ten minutes, dip out the wheat, and letting it drain thoroughly, throw it into a pile on a floor, and when all is done, sprinkle with dry, powdery lime, shoveling it over until dry enough to sow. This may be done 24 to 36 hours before sowing.

Hay and Grain Stacks.—Brace them up if they settle unevenly and incline much. If need be, re-

top them. Spots on large stacks which sag down and do not shed rain may be built up even, by simply laying on hay or straw, and then pinning on a thatch, using hooked or pronged sticks as pins.

Sorghum.—The sorghum crop is, according to the reports we have, small. It is the more important to make the best use of it. The use of Clough's method of clarifying enables farmers to produce marketable syrup at once, which will eventually add greatly to the wealth of the country.

Drainage.—Deepen and clean out open ditches in low land, beginning at the outlet and making the water follow back, thus securing the greatest possible depth. In laying tile or stone drains, remember to make the bed of a true grade, and the soil for a foot or more above the drain as impervious to water as possible, covering the joints, putting in clay or the stiffest soil you can get, and ramming it hard. This secures permanency, as well as efficiency.

Soiling Crops.—Sow wheat and rye for soiling in the spring. Make two sowings, a month or six weeks apart, the first sowing to be between the first and middle of September, the other about the middle of October; at each time sow a patch of wheat and a patch of rye. The rye will be fit to cut first, one patch will follow the other, and then the first wheat will come in cutting condition. Land used for soiling crops should be thoroughly enriched by either yard manure, guano, or stimulating manure of some kind.

Stock require no special attention at this season, except that constant care that all their wants are supplied which they should always have. Animals to be fattened this fall should have slightly increased feed, as the time approaches when the harvesting of corn gives a supply of immature ears and nubbins, which are first to be fed out. If old corn is at hand have it ground, and use it moderately before and after the nubbins come. Give cows that are to be milked through the winter the choice of the pastures, and feed a little (more or less) oil-cake daily, to keep the flow of milk profitably large.

Manure.—The season is favorable for increasing the manure and compost heaps by all sorts of vegetable matter,—potato tops, weeds, swale-grass, reeds, and rushes. Use no weeds the seeds of which are ripe, or will ripen, and follow directions in previous numbers in regard to composting, etc.

Commercial Fertilizers.—Peruvian guano will pay applied broadcast and harrowed in before sowing wheat. Use about 200 lbs. per acre. It may be mixed with its weight, or three times its weight, of plaster, usually with marked benefit. At the South, they use equal parts Peruvian and Swan Island, or some good phosphatic guano, which supplies the place of the gypsum and adds phosphoric acid. Fish manure and bone-dust, applied at the rate of about 400 lbs. of each, is a good substitute. Bone-dust is an excellent application to pastures at this season. Mix with equal parts good lively wood-ashes, pound the mixture solid, or moisten slightly, and after lying a week shovel over on a floor, and break any caked lumps before sowing.

Weeds.—Mow and burn wherever found, if they have matured their seeds, clearing up the fence rows and sheltered places, as well as open grounds.

Work in the Horticultural Departments.

Ripeness is the characteristic of the month; not only do fruits mature, but the new wood ripens. Autumnal flowers bloom in the borders, and the cool nights and warm days are particularly congenial to the growth of the later crops of the kitchen garden. It is the month of fairs and pomological gatherings. Go to your nearest fair, as a matter of duty, and take such fruits, flowers, and vegetables, as you have. Let premium taking be the second thing in your thoughts—helping make a creditable display, the first. The home fair being attended to, visit as many others as possible. One is always sure to learn something, if not from examples, at least from warnings. If the neighborhood warrant it, have a fruit club, or its scope may be extended to include all branches of

horticulture, and now is the time to found one. Have some way of getting the neighbors together to tell experiences and rub off the rust that always accumulates upon those who plod along by themselves.

Orchard and Nursery.

Autumn Planting of trees is best where there is likely to be a long, mild autumn, but where the winter shuts down suddenly, it is better to plant in spring. Next month the trees will be ready to remove from the nursery, and the ground should be prepared for their reception. A deep, well-drained, but not over-rich soil is best. Plow and subsoil, and if possible make the whole piece intended for the orchard so well prepared that a tree will grow in one place as well as in another.

Selecting and Ordering.—Order early, but make a well-considered selection first. Selections of best varieties for States are not always safe guides. Experience of those in the neighborhood is best, and its value decreases as the distance from which it is derived increases. Visit fruit growers, go to fairs, talk fruit with everyone who has any knowledge of the subject, and follow that advice which seems, most reliable. Do not aim at too many varieties, unless you have time and means for carrying on an experimental collection. Twelve kinds of apples or pears are enough for family use, and six are a plenty for market purposes.

Picking and Packing require care, judgment, and conscientiousness. Some hints on packing are given on page 334. Autumn fruit requires more experience in picking than that which matures later. It should be mature and yet not mellow.

Drying and Canning fruit for winter use must be attended to. We have figured some drying houses; patented ones are for sale. A spare room, with a stove in it, should be in readiness when open air drying is depended upon. The fruit can be removed to this during damp or rainy weather, and the drying go on without interruption or damage. In back numbers hints on canning various fruits are given in the Household Department.

Fallen Fruit usually contains insects. Do not allow it to decay upon the ground and thus propagate a brood for another year. Gather and feed to hogs, if these animals do not have the run of the orchard. The best use to make of fallen apples is to convert them into vinegar. Gather, grind and press as for cider, and allow the juice to ferment, with free access of air, in a warm place. The addition of the lees or mother of vinegar, or a quantity of old vinegar, will expedite the process.

Budding may continue as long as the bark of the stock will lift or "run," which it will do with peaches and quince stocks this month. Examine previous buddings and loosen the bandages if need be. Where buds failed, put in others, if not too late.

Seeds, especially of the stone-fruits, must not be allowed to get too dry. They are best preserved in sand or sandy earth, just perceptibly moist, which should be mixed in sufficient quantity to preclude drying or heating. A box in a cool and dry cellar or shed will answer as well as to follow the European plan of burying or stratifying.

Manuring.—Nurserymen who raise the best trees pass between the nursery rows with a plow and turn a shallow furrow, in which a well-decomposed compost is distributed and the earth thrown back. In this way the land is kept in excellent condition.

Prune young trees, to form a proper head.

Weeds.—Let none of them ripen their seeds.

Fruit Garden.

Prepare the soil for fall planting. A rich, fine, deeply-worked soil is needed for successful fruit culture. The hints under "Orchard," apply to such trees as are grown in the fruit garden.

Pears are to be picked as fast as they mature. When fully developed, the stem will part readily from the tree. Ripen them in the house.

Blackberries.—Remove the old stems as soon as the fruit is off. See hook for this purpose on another page. Pinch the side shoots of the new growth to

about 18 inches. This will induce the wood to ripen, and prevent injury by winter-killing.

Black Caps.—If it is desired to propagate plants, the tips of the canes should be layered. The tip is to be covered with only enough earth to hold it in place and prevent it being blown about by the winds. Too deep covering is injurious.

Raspberries in garden culture are best if kept in place by some kind of trellis or support. Keep the ground clear of weeds and allow no suckers to grow, except such as are wanted for new plants.

Grapes.—Market-growers often gather the fruit as soon as it is colored and before it is fully ripe. Some varieties, like the Diana, are eatable when only partly ripe. Full maturity is shown by the stem assuming a ripe appearance and losing its stiffness, allowing the bunches to hang directly down from the vine. Use scissors in gathering, and handle the fruit as little as possible.

Strawberries.—New beds are to be kept clean, and no runners allowed to grow. Beds may be set now, taking the plants up carefully and removing all the large leaves, to prevent evaporation. Where plants have been struck in pots, this precaution is unnecessary, as the roots of the plants are scarcely disturbed by turning them out of the pots.

Kitchen Garden.

Beans.—If the Linas set more than can be used in the green state before frost, shell and dry for winter. Soaked over night before cooking, they are nearly as good as when fresh. Salt string beans.

Cabbages and Cauliflowers.—Around New York the seeds for plants to be kept over winter are sown from the 10th to the 20th of this month. Sow Wakefield, Early York, or other early cabbage, and Erfurt or other early cauliflower, in well-prepared seed-beds, in the open ground. Keep the soil stirred among the late crops. Sprinkle lime if troubled with slugs—ducks will destroy them.

Borcole or Kale for spring greens or "sprouts" is sown this month, in drills a foot apart. The kind called German Greens is the hardiest.

Corn.—Continue to dry for winter use. See article on page 263, July, on salting green corn.

Cucumbers.—Go over the vines at least every two days and gather for pickles; remove the overgrown.

Celery.—Continue to earth up for blanching. That grown in flat culture, i. e. not in trenches, requires to be earthed up about ten days before it is blanched sufficiently for use. The main winter crop is not earthed up until later in the season.

Endive.—Blanch as directed last month.

Manure.—The compost heaps should now grow rapidly from the addition of garden refuse. All but very young weeds should be dried and burned.

Melons.—Young fruit that will not ripen is to be picked and used for stuffed pickles or mangoes.

Onions.—See that those stored are so thinly spread that they will not become heated. Take up sets, if not already done, and spread in thin layers in a cool, dry loft. The same with top onions.

Radishes.—Winter sorts may be sown early in the month, with a prospect of a fair crop.

Shallots.—This is a species of onion which is multiplied by dividing the clusters of small bulbs. Set single bulbs six inches apart, in rows a foot asunder. It is hardy, and gives in spring what are usually sold as young onions. The flavor is much stronger than that of the onion.

Spinach.—Sow for the winter crop before the middle of the month, in rows 12 or 15 inches apart. Thin and weed the young plants when large enough.

Sweet Potatoes.—Some of the larger roots may be taken by carefully removing the earth from the ridges, and the smaller ones left to grow as long as frost will let them. Dig with the first frost.

Tomatoes will still be infested by the "worm," and will need to be looked over occasionally. Preserve and make catsup while the fruit is plenty and better than it is later in the season.

Turnips.—The Ruta-bagas or Swedes will need

good culture until the size of the leaves prevents working among them. Sow round turnips.

Winter Cherry, or Physalis.—The fruit of this, preserved, makes a strawberry-flavored sweetmeat, much liked by many. The fruit, left in its place, will keep for some months, if spread in a dry place.

Flower Garden and Lawn.

Bulbs.—The hardy bulbs, such as hyacinths, tulips, crocuses, etc., that were taken up, may be planted the last of this month, or early in October. Purchase as soon as the dealers receive their stock.

Perennials.—Those which complete their growth early, such as *Dianthus*, may be divided and reset, if the plants are large enough to require it. The seeds of many perennials, if sown now, will make plants large enough to pass the winter.

House Plants that have been turned out should be taken up and reported before there is danger of frost. Keep them shaded until they recover, but do not take them into the house until cool weather.

Chrysanthemums.—Have them properly staked. The bloom of the tall-growing kinds is so heavy, especially when wet by the rains, that they are apt to be broken down. Those intended for blooming indoors are to be potted when the buds are well developed. They will wilt at first, but with a few days' shading and watering will recover.

Dahlias.—Autumn storms will prostrate these just as they are in their best, if they are not carefully staked and tied. Pick off flowers that have passed their prime as well as misshapen buds.

Violas.—Prepare for forcing by setting the plants in fine rich soil in a cold frame, which is not to be covered until frosty weather.

Pits for wintering half hardy plants should be made ready. They should be well drained and at the same time secure from the entrance of rats and mice.

Green and Hot-Houses.

Get through with repairs to the houses and heating apparatus, and have all ready to receive the plants if sudden cold weather should make it necessary to take them in early.

Cuttings may be made from those bedding plants of which a stock to keep over winter is desired.

Seeds of such annuals as are desired for early winter blooming may be sown. Candytuft and mignonette are always in demand for bouquets.

Hanging Baskets may be started. Ivy is the basis and should be used in abundance.

Cape Bals may be potted, as may hyacinths, &c. It is best to plunge the pots in a dry place and cover with earth until cool weather, when they may be removed to the dwelling or green-house.

Plants in Pots, that are out of doors, must not be allowed to get too dry. See that they are not thrown over and broken by heavy autumnal gales.

Cold Grapery.

The fruit is apt to be much injured by rains and mice. Set traps for these, and have a good look on the house to prevent thieving. Keep the house closed during storms, but give ventilation on dry days. The healthful condition of the foliage should be preserved in order to insure ripe wood.

Commercial Matters—Market Prices.

Gold has been in more active speculative demand, and has been as high as 150½ (on the 6th inst.), but it has since receded to 145½, and it closes at 146½. The trade in Breadstuffs has been more animated, stimulated by the less favorable crop reports, both domestic and foreign, especially the latter, and by the sharp rise in gold which helped the export movement. Prices have advanced decidedly, closing with an upward tendency for Wheat, Corn, and Rye, though in favor of buyers for Flour and Oats. Receipts have been, as a rule, on a restricted scale, though Corn has arrived quite freely. Very little of the corn that has come to hand has been fit for export. It has been more or less warm, and damaged, for the most part. Provisions have been in moderate trade and speculative receipt, at somewhat better prices

for the leading articles... Cotton has been lightly dealt in, closing rather heavily... Wool has been more freely offered at reduced figures, and consequently has been in livelier demand, though the market closes tamely... In the line of Seeds, trade has been more active, particularly in Clover, which has been taken freely for shipment at buoyant rates... Tobacco has been in much better request, chiefly for export, at firmer prices for the low grades... Hay has been moderately dealt in at easier figures... Hops have been dull and nominal.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for the month ending Aug. 14, 1868, and for the corresponding month last year:

1. TRANSACTIONS AT THE NEW-YORK MARKETS.
RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
27 days *thru* 106,000 577,000 2,283,000 3,500 41,000 635,000
24 days *thru* 106,000 577,000 2,283,000 3,500 41,000 635,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats.
27 days *thru* 106,000 577,000 2,283,000 3,500 41,000 635,000
24 days *thru* 106,000 577,000 2,283,000 3,500 41,000 635,000

2. Comparison with same period at this time last year.
RECEIPTS. Flour, Wheat, Corn, Rye, Barley, Oats.
27 days 1868... 106,000 577,000 2,283,000 3,500 41,000 635,000
27 days 1867... 159,000 611,000 2,954,000 21,900 61,000 102,000

SALES. Flour, Wheat, Corn, Rye, Barley, Oats.
27 days 1868 318,000 1,189,000 3,188,500 21,000 1,895,000
27 days 1867 218,000 694,000 3,189,000 98,000 9,000

3. Exports from New York, Jan. 1 to August 14:

Flour, Wheat, Corn, Rye, Barley, Oats.
1868... 481,073 2,956,222 1,414,662 135,003 39,368
1867... 481,073 2,956,222 1,414,662 135,003 39,368
1866... 481,073 2,956,222 1,414,662 135,003 39,368

4. Stock of grain in store at New York:

Wheat, Corn, Rye, Barley, Oats, Mail, Bush.
1868... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
July 15... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
June 10... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
May 10... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Apr. 13... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Mar. 10... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Feb. 10... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Jan. 13... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129

1867.
Dec. 11... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Nov. 13... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Oct. 15... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Sept. 15... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Aug. 13... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
July 15... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
June 10... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
May 10... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Apr. 13... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Mar. 10... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Feb. 10... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129
Jan. 13... 1,001,129 1,001,129 1,001,129 1,001,129 1,001,129

5. Receipts at head of this river at Albany, each season to July 31st:

Flour, Wheat, Corn, Rye, Barley, Oats.
1868... 115,900 4,003,000 7,315,500 159,500 326,500 3,855,000
1867... 64,700 316,400 6,882,700 126,300 151,000 1,491,000
1866... 114,400 1,429,000 11,354,000 175,000 105,500 5,047,000

CURRENT WHOLESALE PRICES.

	July 14.	Aug. 14.
PRICE OF GOLD.	111½	116½
Flour—Super to Extra State	\$6 60	\$7 50
Extra Western	8 00	8 15
Extra Eastern	8 00	8 15
Extra Western	8 00	8 15
Extra Eastern	8 00	8 15
RYE FLOUR	7 50	8 15
CORN MEAL	5 25	6 25
SHRIMP—All kinds of White	1 25	2 00
All kinds of Red and Amber	1 25	2 00
CORN—Yellow	1 12	1 12
Mixed	1 04	1 12
OATS—Western	81	86½
RYE	1 20	1 15
BARLEY	1 20	1 15
WHEAT—No. 1	1 20	1 15
WHEAT—No. 2	1 15	1 10
WHEAT—No. 3	1 10	1 05
WHEAT—No. 4	1 05	1 00
WHEAT—No. 5	1 00	0 95
WHEAT—No. 6	0 95	0 90
WHEAT—No. 7	0 90	0 85
WHEAT—No. 8	0 85	0 80
WHEAT—No. 9	0 80	0 75
WHEAT—No. 10	0 75	0 70
WHEAT—No. 11	0 70	0 65
WHEAT—No. 12	0 65	0 60
WHEAT—No. 13	0 60	0 55
WHEAT—No. 14	0 55	0 50
WHEAT—No. 15	0 50	0 45
WHEAT—No. 16	0 45	0 40
WHEAT—No. 17	0 40	0 35
WHEAT—No. 18	0 35	0 30
WHEAT—No. 19	0 30	0 25
WHEAT—No. 20	0 25	0 20
WHEAT—No. 21	0 20	0 15
WHEAT—No. 22	0 15	0 10
WHEAT—No. 23	0 10	0 05
WHEAT—No. 24	0 05	0 00
WHEAT—No. 25	0 00	0 00
WHEAT—No. 26	0 00	0 00
WHEAT—No. 27	0 00	0 00
WHEAT—No. 28	0 00	0 00
WHEAT—No. 29	0 00	0 00
WHEAT—No. 30	0 00	0 00
WHEAT—No. 31	0 00	0 00
WHEAT—No. 32	0 00	0 00
WHEAT—No. 33	0 00	0 00
WHEAT—No. 34	0 00	0 00
WHEAT—No. 35	0 00	0 00
WHEAT—No. 36	0 00	0 00
WHEAT—No. 37	0 00	0 00
WHEAT—No. 38	0 00	0 00
WHEAT—No. 39	0 00	0 00
WHEAT—No. 40	0 00	0 00
WHEAT—No. 41	0 00	0 00
WHEAT—No. 42	0 00	0 00
WHEAT—No. 43	0 00	0 00
WHEAT—No. 44	0 00	0 00
WHEAT—No. 45	0 00	0 00
WHEAT—No. 46	0 00	0 00
WHEAT—No. 47	0 00	0 00
WHEAT—No. 48	0 00	0 00
WHEAT—No. 49	0 00	0 00
WHEAT—No. 50	0 00	0 00
WHEAT—No. 51	0 00	0 00
WHEAT—No. 52	0 00	0 00
WHEAT—No. 53	0 00	0 00
WHEAT—No. 54	0 00	0 00
WHEAT—No. 55	0 00	0 00
WHEAT—No. 56	0 00	0 00
WHEAT—No. 57	0 00	0 00
WHEAT—No. 58	0 00	0 00
WHEAT—No. 59	0 00	0 00
WHEAT—No. 60	0 00	0 00
WHEAT—No. 61	0 00	0 00
WHEAT—No. 62	0 00	0 00
WHEAT—No. 63	0 00	0 00
WHEAT—No. 64	0 00	0 00
WHEAT—No. 65	0 00	0 00
WHEAT—No. 66	0 00	0 00
WHEAT—No. 67	0 00	0 00
WHEAT—No. 68	0 00	0 00
WHEAT—No. 69	0 00	0 00
WHEAT—No. 70	0 00	0 00
WHEAT—No. 71	0 00	0 00
WHEAT—No. 72	0 00	0 00
WHEAT—No. 73	0 00	0 00
WHEAT—No. 74	0 00	0 00
WHEAT—No. 75	0 00	0 00
WHEAT—No. 76	0 00	0 00
WHEAT—No. 77	0 00	0 00
WHEAT—No. 78	0 00	0 00
WHEAT—No. 79	0 00	0 00
WHEAT—No. 80	0 00	0 00
WHEAT—No. 81	0 00	0 00
WHEAT—No. 82	0 00	0 00
WHEAT—No. 83	0 00	0 00
WHEAT—No. 84	0 00	0 00
WHEAT—No. 85	0 00	0 00
WHEAT—No. 86	0 00	0 00
WHEAT—No. 87	0 00	0 00
WHEAT—No. 88	0 00	0 00
WHEAT—No. 89	0 00	0 00
WHEAT—No. 90	0 00	0 00
WHEAT—No. 91	0 00	0 00
WHEAT—No. 92	0 00	0 00
WHEAT—No. 93	0 00	0 00
WHEAT—No. 94	0 00	0 00
WHEAT—No. 95	0 00	0 00
WHEAT—No. 96	0 00	0 00
WHEAT—No. 97	0 00	0 00
WHEAT—No. 98	0 00	0 00
WHEAT—No. 99	0 00	0 00
WHEAT—No. 100	0 00	0 00

New York Live Stock Markets.

WEEK ENDING. Bees, Cows, Calves, Sheep, Swine, Turkeys.
July 13th... 4,945 80 1,800 2,900 13,200 48,831
July 20th... 6,517 80 1,056 18,710 10,781 37,694
July 27th... 5,259 152 1,702 30,458 14,150 51,461
Aug. 3rd... 5,259 152 1,702 30,458 14,150 51,461
Aug. 10th... 6,185 111 1,556 29,000 11,851 50,973

Total in five weeks... 30,675 518 7,648 109,161 65,677 268,941
do for previous 4 weeks... 24,278 365 9,532 84,594 72,695 193,454

Average per Week... 6,135 104 1,529 21,832 13,345
do, do, last Month... 5,259 152 1,702 30,458 14,150
do, do, prev's Month... 6,019 136 2,773 15,511 20,160

Average per Week, 1867... 5,544 64 1,320 22,154 30,665
do, do, do, 1867... 5,544 64 1,320 22,154 30,665
do, do, do, 1867... 5,544 64 1,320 22,154 30,665

Total in 1867... 298,890 4,885 6,621 1,171,151 1,026,620
Total in 1868... 30,675 518 7,648 109,161 65,677
Total in 1869... 298,890 4,885 6,621 1,171,151 1,026,620

Total in 1868... 30,675 518 7,648 109,161 65,677
Total in 1869... 298,890 4,885 6,621 1,171,151 1,026,620

The above table gives the weekly receipts for the five weeks ending August 10th, the total number of all kinds for each week, also the number of each kind for the five weeks, as well as the sum of all kinds for the month.

There has been no material change in the condition of beef trade since our last report. With a full supply of cattle, and continued warm weather, sales have been slow. The average condition of the stock has been no better than last month, and some weeks it was worse. Indeed, there have been many lots of only half-fed "crass beef" that sold very low at the reduced rates given below, and at a loss to their owners. To hold such cattle over for another market-day at the risk of shrinkage was too hazardous, and not a few forced sales were made. There were no really good cattle in market, and those which brought the highest figures sold for all they were worth. After the "tops" of each drove were sold, the stock-men were obliged to drop 1½¢ per pound in prices, in order to dispose of the rest. Indeed, a fair offer was seldom rejected, and the drovers manifested no little anxiety as the day advanced for fear they would lose their stock. Some of the cattle were sold on the scales at 57¢ per lb. to the cwt., but the majority were sold on foot or by the head. The large increase for the week ending August 3d, over the previous week, was caused mostly by the arrival of a number of small droves of "State cattle." The farmers were heartily sick of their undertaking, and assured us if they only got rid of their stock and had money enough to take them home, they would stay there, and "not go clammimg at high water" again. The following list gives the range of prices, average price, and the figures at which the largest lots were sold:

July 13th ranged 116½¢ to 117½¢. Av. 16 c. Largest sales 13 66½¢
do, 20th do, 126½¢ to 127½¢. do, 13 c. do, 13 66½¢
do, 27th do, 105½¢ to 106½¢. do, 12 c. do, 12 66½¢
Aug. 3d do, 10 66½¢ to 10 75¢. do, 13 c. do, 11 66½¢
do, 10th do, 10 66½¢ to 10 75¢. do, 13 c. do, 13 66½¢

Prices have not been as uniform as usual, on account of the great diversity in the quality of the beef. It is safe to quote the prices as one cent lower on fair beef, while slugs, cows, and their "Texas Hoppers," declined at least two cents. At the close of our report we saw no prospect of immediate improvement. The recent disease, (See article on page 322), which is making such inroads upon our Western cattle, may, and probably will, affect the supply of stock for a few months. This disease seems to be spreading, and not a few cattle have already died after their arrival here. One of our largest dealers, Mr. J. T. Alexander, shipped a drove of 205 head from Chicago last week, and only 141 head reached here alive, and those were pronounced so diseased by the Board of Health after a thorough inspection of them, that they were all killed and consigned to the rendering tanks for tallow. The yards they occupied have been thoroughly disinfected, and every precaution taken to prevent the spread of the disease. **Milk Cows** still sell slow, mostly to city milk-men, who want fresh cows, and will pay \$750-\$80 for a good one. A cow to sell well should be "fresh" and have her calf with her. A large number of "half-milked" cows have been thrown on the market by citizens whose families are in the country. A borrowed calf is sometimes put with each in hopes to make them sell, but it don't work, and many remain unsold from day to day. Prices continue about the same; \$80 will get a good cow and \$40 a poor one... **Veal Calves** sell readily, and with the diminished supply quite keep up to last month's prices. Most of the grass-fed calves sell by the head at \$100-\$114 each. Prime fat, milk-fed, will bring 11½¢ to 11½¢ per pound... **Sheep and Lambs** have changed very little, either in quality or price, since our last report. The market has been more than full every week, and prices have gone down ½¢ per pound. The quality, on the whole, has been a little better, and the week ending with our report, good sheep sold for 6¢ per pound. The very best lots, very fat, brought 7¢, while those only middling could be had for 6¢ 5½¢. Lambs vary from 7¢ to 10¢ per pound, with a downward tendency. Many good lambs have sold as low as 8¢, and what may be called decent, at 7½¢ per pound... **Swine.** The supply still keeps low and prices firm. Sales are active

at a little advance in rates. Good hogs bring 10@11c., or about 14c. per pound above prices paid last month. Some light hogs sell as low as 9c., but they are very few. Prices range from 9@11½c. per pound.

The Fairs for 1868.

State and National Fairs.

Chili (S.A.)	Santiago, commences	Dec 15
New England	New Haven, Ct.	Sept. 1-5
Kentucky	Louisville	Sept. 8-12
Vermont	Burlington	Sept. 8-11
Michigan	Detroit	Sept. 15-18
New Hampshire	Manchester	Sept. 15-18
Ohio	Cincinnati	Sept. 21-25
Illinois	Quincy	Sept. 21-26
Iowa	Clinton	Sept. 20-Oct. 2
Indiana	Indianapolis	Sept. 28
Iowa Central	Des Moines	Sept. 22-24
N. J. Central	Trenton	Sept. 22-24
Oregon		begins Sept. 28
Wisconsin	Madison	Sept. 29-Oct. 2
Minnesota	Minneapolis	Sept. 29-Oct. 2
Pennsylvania	Harrisburg	Sept. 29-Oct. 2
New York	Rochester	Sept. 29-Oct. 2
Maine	Portland	Sept. 29-Oct. 2
New Jersey	Waverly	Sept. 29-Oct. 2
Kansas	Leavenworth	Sept. 29-Oct. 2
Quebec	Montreal	Sept. 14-19
Colorado	Denver	Sept. 20-Oct. 3
Virginia & North Carol.	Border Fair, Danville, N. C.	Oct. 30
Ontario	Hamilton	Sept. 21-25
National Horse Show	Providence, R. I.	Oct. 6-9

Horticultural Exhibitions.

Worcester Co. (Mass.)	Worcester	Sept. 15-18
Am. Wine Growers	Cincinnati	Sept. 22
Cincinnati Hort.	Cincinnati	Sept. 23
Delaware Hort. Soc.	Wilmington	Sept. 16-19
Pleasant Valley Grape	Hammondsport	Sept. 23-25
Mass. Hort. Society	Boston	Sept. 23-25
N. Y. Grape Growers	Candaingna	Oct. 7-8
Y. Y. Hort. Soc.	Painesville, O.	Oct.
Knob's Grape Show	Pittsburgh	Oct.
Virginia Horticultural & Pomological	Richmond, Oct.	

County and Local Fairs.

NEW HAMPSHIRE.

Conn. River	Keene	Sept. 17-19
Ontonocog Valley	Hillsboro Br.	Sept. 22-23
Rockingham & Art.	Concord	Oct. 6-7
Merrimack Co.	Concord	Sept. 29-Oct. 2
Piscataqua Co.	Portsmouth	Sept. 10-11
Rockingham Co.	Portsmouth	Sept. 23-25
Stratford Co.	Dorchester	Sept. 23-25

VERMONT.

Bennington	Bennington	Sept. 2-4
Berkshire, &c. (Town)	Richford	Sept. 9-10
Lamelle	Morrisville	Sept. 15-17
Orleans	Barton	Sept. 15-17

MASSACHUSETTS.

Barnstable Co.	Barnstable	Oct. 6-7
Bristol Co.	Taunton	Oct. 6-7
W. Centre	Middlebury	Sept. 17-18
Berkshire Co.	Pittsfield	Oct. 6-8
Essex Co.	Newburyport	Sept. 29-30
Franklin Co.	Greenfield	Sept. 24-25
Montenotte Co.	Great Barrington	Sept. 24-25
Hampshire, Franklin & Hampden	Norham	Oct. 1-2
Hampshire Co.	Amherst	Sept. 23-30
Hampden Co.	Springfield	Oct. 6-7
Hampden, East	Pittsfield	Oct. 23-24
Hingham	Middlefield	Sept. 10-11
Hingham	Hingham	Sept. 29-30
Housack Valley	North Adams	Sept. 22-23
Weymouth	Barre	Oct. 1-2
Middlesex	Middlefield	Sept. 10-11
Middlesex Co.	Concord	Oct. 1-3
Middlesex South	Framingham	Sept. 23-24
Middlesex North	Concord	Sept. 23-24
Martha's Vineyard	West Tisbury	Oct. 20-21
Nantucket	Nantucket	Sept. 30-Oct. 1
Norfolk Co.	Dedham	Sept. 17-18
Northampton	Bridgewater	Sept. 24-25
Union	Blandford	Sept. 16-17
Worcester Co.	Worcester	Sept. 17-18
Worcester West	Barre	Sept. 24-25
Worcester North	Pittsfield	Sept. 24-25
Worcester Northwest	Athol	Sept. 15
Worcester South	Sturbridge	Oct. 1
Worcester Southeast	Milford	Sept. 29-30

CONNECTICUT.

Middlesex Co.	Middletown	Oct. 6-9
Windham Co.	Brooklyn	Sept. 22-24

NEW JERSEY.

Central	Trenton	Sept. 22-21
Cumberland Co.	Bridgeton	Sept. 29
Huntingdon Co.	Fair grounds	Sept. 29-Oct. 1

NEW YORK.

Cayuga Co.	Auburn	Sept. 15-17
Chemung Co.	Elmira	Oct. 7-9
Columbia Co.	Albany	Sept. 15-17
Clinton Co.	Chatham	Sept. 15-18
Convent Co.	Gouverneur	Sept. 16-18
Dutchess Co.	Washington Hollow	Sept. 22-25
Livingston Co.	Glenes	Sept. 23-24
Putnam Co.	Cooperstown	Sept. 22-Oct. 2
Orange Co.	West Point	Sept. 22-21
Queens Co.	Minerva	Sept. 22-21
Saratoga Co.	Saratoga	Sept. 8-11
Schenectady Valley	Schenectady	Sept. 22-18
Washington Co.	Salem	Oct. 7-9
Westchester Co.	White Plains	Sept. 22-25
St. Lawrence Co.	Canton	Sept. 22-24
Ulster Co.	Kingston	Sept. 22-24

PENNSYLVANIA.

Allegheny	Pittsburgh	Oct. 6-9
Bucks Co.	Newtown	Sept. 22-24
Butler Co.	Butler	Sept. 28-29
Chester Co.	St. Charles	Sept. 28-29
Clearfield Co.	Clearfield	Oct. 13-16
Columbia Co.		Oct. 14-16
East Penna.	Norristown	Sept. 17-19
Union Co.	York	Oct. 7-9
Union Agr. Society	Burgessstown	Sept. 1
Wyoming Co.	Nicholson	Sept. 22-24
York Co.	York	Oct. 6-9

MARYLAND.

Frederick Co.	Frederick City	Oct. 29-31
Washington Co.	Hagerstown	Oct. 13-16

OHIO.

Allen Co.	Lima	Sept. 16-19
Ashtabula Co.	Ashtabula	Sept. 30-Oct. 2
Ashtabula Co.	Jefferson	Sept. 15-17
Belmont Co.	Washington	Sept. 23-25
Belmont (Town)	Belmont Co.	Sept. 15-17
Brookfield Co.	Brookfield	Sept. 9-11
Butler Co.	Hamilton	Oct. 6-9
Champaign Co.	Urbana	Sept. 21-Oct. 2
Clarke Co.	Springfield	Sept. 8-11
Clermont Co.	Boston	Sept. 15-18
Columbiana Co.	New Lisbon	Sept. 22-25
Cuyahoga Co.	Cleveland	Sept. 23-25
Coshocton Co.	Coshocton	Oct. 7-9
Delaware Co.	Delaware	Oct. 6-9
Erle Co.	Sandusky	Sept. 30-Oct. 3
Franklin Co.	Columbus	Sept. 15-18
Gallia Co.	Gallipolis	Sept. 16-18
Garraville Co.	Garraville	Sept. 29-Oct. 1
Greene Co.	Greene	Sept. 15-18
Hancock Co.	Fundley	Oct. 1-3
Harrison Co.	Cadiz	Oct. 6-9
Haysville	Ashtabula County	Oct. 6-9
Highland Union Co.	Highland	Sept. 16-18
Huron Co.	Norwalk	Sept. 16-18
Independent	Ilwaco	Oct. 6-9
Jackson Co.	Jackson	Oct. 1-2
Jefferson Co.	Green County	Sept. 28-30
Lake County	Painesville	Sept. 30-Oct. 2
Logan Co.	Bellefontaine	Oct. 6-9
Lorain Co.	Elyria	Sept. 15-18
Madison Co.	Findlay	Sept. 30-Oct. 2
Mahoning Co.	Canfield	Oct. 6-8
Medina Co.	Medina	Oct. 6-8
Miami Co.	Rock Springs	Oct. 1-2
Meigs Co.	Coluna	Oct. 6-9
Morrow Co.	Troy	Sept. 23-26
Morrow Co.	Mt. Gilead	Sept. 15-18
Orwell (Town)	Ashtabula Co.	Sept. 29-Oct. 1
Orwell Co.	Orwell	Oct. 6-9
Orwell Co.	Wayne Co.	Oct. 14-16
Pickaway Co.	Circleville	Sept. 9-11
Pike Co.	Charleston	Sept. 9-13
Richfield	Sammit Co.	Sept. 15-17
Sandusky Co.	Fremont	Sept. 17-19
Seneca Co.	Tiffin	Sept. 29-Oct. 2
Shelby Co.	Shelby	Sept. 29-Oct. 2
Summit Co.	Akron	Sept. 29-Oct. 2
Stark Co.	Canton	Oct. 7-9
Thompson	Geneva Co.	Oct. 1-2
Tuscarawas Co.	West Philadelphia	Sept. 16-18
Twinsburg	Summit Co.	Sept. 1-3
Union (Greene Co.)	Marysville	Sept. 30-Oct. 2
Warren Co.	Lebanon	Sept. 16-18
Washington Co.	Washington	Sept. 15-18
Wellington	Lorain Co.	Oct. 7-9

INDIANA.

Dearborn Co.	Aurora	Sept. 8-11
Edinburgh	Union Co.	Sept. 22-26
Hendricks Co.		Sept. 1-4
Switzerland & Ohio Cos.	E. Enterprise	Sept. 21-25
Vermilion Co.	Newport	Sept. 1-1

ILLINOIS.

Bou Co.	Belvidere	Sept. 29-Oct. 2
Bureau Co.	Princeton	Sept. 15-17
Cass Co.	Virginia	Sept. 1-3
Champaign Co.	Charleston	Sept. 9-13
DeKalb Co.	Mt. Carroll	Sept. 29-Oct. 2
DeWitt Co.	Clinton	Sept. 22-25
Douglas Co.	Tuscola	Oct. 6-9
DuPage Co.	Wheaton	Sept. 15-17
Grundy Co.	Morris	Sept. 15-18
Greene Co.	Carrollton	Sept. 29-Oct. 2
Henderson Co.	Bigsby	Sept. 30-Oct. 2
Henry Co.	St. Charles	Sept. 29-Oct. 2
Jefferson Co.	Mt. Vernon	Sept. 29-Oct. 2
Jo. Davies Co.	Galena	Sept. 29-Oct. 2
Kane Co.	Geneva	Sept. 29-Oct. 2
Rock Island Co.	Rock Island	Sept. 29-Oct. 2
Knox Co.	Knoxville	Sept. 29-Oct. 2
Lassalle Co.	Ottawa	Sept. 22-25
Louisa Co.	Lincoln	Sept. 29-Oct. 2
Macoupin Co.	Macoupin	Sept. 14-17
Madison Co.	Carlinville	Oct. 13-16
Marion Co.	Salem	Oct. 6-9
McLean Co.	Bloomington	Sept. 8-11
Menard Co.	Waverly	Sept. 22-24
Morgan Co.	Jacksoville	Sept. 15-18
Ogle Co.	Oregon	Oct. 7-9
Peoria Co.	Peoria	Oct. 6-9
Rock Island Co.	Rock Island	Sept. 14-18
Sangamon Co.	Springfield	Oct.
St. Clair Co.	Belleville	Sept. 8-11
Stephenson Co.	Proctor	Oct. 6-9
Tazewell Co.	Shelburne	Sept. 22-24
Union Central	Atlanta	Sept. 15-18
Union Co.	Jonesboro	Sept. 16-18
Vermilion Co.	Carlin	Oct. 6-9
Whitesides Co.	Stein	Sept. 15-18
Woodford Co.	Eureka	Sept. 15-18

MICHIGAN.

Ionia Co.	Ionia	Oct. 7-9
WISCONSIN.		
Crawford Co.	Denison	Oct. 8-9
Fond du Lac Co.	Fond du Lac	Oct. 6-8

Green Lake Co.	Darlington	Oct. 6-8
La Fayette Co.	Grand Chute	Sept. 22-24
Outagamie Co.	Ripon	Sept. 22-24
Rock Co.	Janville	Sept. 15-17
Walworth Co.	Elkhorn	Oct. 6-8
Jameau Co.	Manston	Oct. 6-8

IOWA.

Bremor Co.	Waverly	Oct. 6-8
Crawford Co.	Denison	Oct. 8-9
Des Moines Co.	Des Moines	Oct. 6-9
Doy Co.	Burlington	Sept. 22-24
Floyd Co.	Charles City	Sept. 15-17
Henry Co.	Mt. Pleasant	Sept. 22-25
Polk Co.	Des Moines	Sept. 22-24
Scott Co.	Davenport	Sept. 7-11
Tama Co.	Tama	Sept. 30-Oct. 2
Wapello Co.	Ottumwa	Oct. 13-14

MINNESOTA.

Goodhue Co.	Red Wing	Oct. 14-16
Goodhue (Township)		Oct. 1
Northfield Co.	Northfield	Sept. 15-19

KANSAS.

Anderson Co.		Oct. 14-16
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NEBRASKA.

Nemaha Co.	Brownsville	Sept. 22-25
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MISSOURI.

Andrain Co.	Mexico	Oct. 13-16
Callaway Co.	Fulton	Sept. 22-25
Carroll Co.		Sept. 30-Oct. 2
Cass Co.	Pleasant Hill	Sept. 22-25
Clinton Co.		Sept. 8-10
Greene Co.	Liberty	Oct. 6-9
Gentry Co.	Albany	Oct. 14-16
Jefferson Co.	De Soto	Sept. 22-25
Knox, Shelby and Lewis Counties		Sept. 14-18
La Fayette Co.	Lexington	Oct. 20-25
Linn Co.	Linn	Sept. 30-Oct. 3
Lewis Co.	Canton	Sept. 28-Oct. 2
Monroe Co.		Sept. 28-Oct. 2
Northeast Mo.	Paris	Sept. 7-12
Platte Co.	Platte City	Sept. 29-Oct. 3
Randolph Co.	Huntsville	Sept. 15-19
Rossfork Co. Dis.	Rossfork	Sept. 21
St. Louis Co.	St. Louis	Oct.
Sturgeon Dis.	Sturgeon	Sept. 1-5
Union Co.	Newark	Sept. 14-19
Washington Co.		Sept. 29-Oct. 2

KENTUCKY.

Bourbon Co.	Danville	Sept. 1-4
Boyle Co.	Paris	Sept. 11-11
Bracken Co.	See Mason	Sept. 8
Fayette Co.	Lexington	Sept. 29-Oct. 1
Harrison Co.	Harrison	Sept. 8-11
Madison Co.	Madison	Sept. 6-10
Mason and Bracken Cos.	Hermantown	Sept. 8
Salvisa Co.	Salvisa	Sept. 1-4
Scott Co.	Georgetown	Sept. 15-18
Washington Co.	Springfield	Sept. 29-Oct. 2

TENNESSEE.

Giles Co.	Palmski	Oct. 5
Maury Co.	Columbia	Sept. 29
Montgomery Co.	Clarksville	Oct. 5
Robertson Co.	Springfield	Oct. 13-17
Warren Co.		Oct. 1-3

Crop Prospects and Prices.

From all we can judge the public are much better informed in regard to the condition of the crops of the whole country than ever before, at this season. Not only has the Agricultural Department been more prompt in disseminating information, but the returns seem decidedly more accurate. Besides the Associated Press have taken unusual pains to ascertain by telegraph and through unbiased persons the true condition of the crops. These reports have been extensively published. They accord in general very closely with our own views and observations, and with the reports from our correspondents. Taking the whole country together, the season is a very productive one. Notwithstanding the lateness of the Spring and Summer the whole *corn crop* of the country is reckoned likely to be above the average; though it should be taken into account that the great heats of July may be balanced by early frosts which may seriously injure it. *Wheat* is reported as above average in quantity and quality in the Northern States, while in most of the Southern States it is about an average. Georgia, South Carolina, Alabama and Texas report the partial failure of the crop. The time of writing (the middle of August) is hardly early enough to report with confidence on Summer grains, *Wheat, Oats and Barley*, yet their appearance was promising. Extensive rains and high winds occurred during the harvesting of these crops, which have doubtless done considerable harm. Throughout the Middle States and Ohio and Indiana there has been an unusually large and excellent *hay crop* secured—amounting in many extensive sections to fully one-third more than usual. Less land has been put in *cotton* this year than last, but it has had better attention, and promises very well. The *potato crop* was injured somewhat by the short drought of July, but the rot has been serious in some places—yet on the whole the prospects of an average yield are good; it is too early to claim more than that. We are satisfied that we will rejoice in an unusual

abundance, but must caution our readers not to let down their anticipations of good prices, nor be deceived by the representations of speculators.

Advices from Europe indicate a great demand for American breadstuffs, already large shipments of *Hay* to England have taken place. The long continued drought affecting Great Britain most seriously is also widely felt upon the continent. As is almost always the case we presume the governments of Europe now suppress information that would tend to raise the prices of grain, until their own wants for rye and other stores are supplied. The great quantities of wheat usually drawn from Southern Russia and the Black Sea are greatly diminished, while short crops of cereals and roots, as well as hay, make a season of famine imminent unless relief comes very soon. All this will make a great demand for American products, and prices will surely rise much higher than they otherwise would. While the distressing necessities of these countries enhance the profits of our land and labor, we may have the satisfaction of knowing that as a rule the higher the prices the more even will be the distribution of staple articles of food, and the greater will be the economy exercised in their use.

SOMETHING

FOR

"The Rest of Mankind."

As about "All the World" now take this journal, it is proposed to invite the "rest of mankind," to go (or come) and do like-wise. As they have not seen—or at least have not responded to—previous invitations, it is proposed to awaken their attention and appeal to their interest, by what in effect amounts to

3 Months Subscription for \$0.00,

As here follows: to wit: viz: namely:

Every New Subscriber to the American Agriculturist for 1869, whose subscription comes to hand before Sept. 30th, will be presented with the paper the rest of this year without charge, viz.: namely: to wit:

\$1.⁰⁰ Received during September will pay for this paper, for one subscriber, from October 1868 to December 1869 *inclusive*, that is for 15 months (a pretty long year!)

\$5.⁰⁰ Will do the same thing for **Four** subscribers, that is only \$1.²⁵ each for 15 months.

\$12.⁰⁰ Will do the same thing for **Ten** subscribers, that is, only \$1.²⁰ each for 15 months.

\$1.⁰⁰ Will do the same thing for **each** subscriber, where twenty or more persons club together.

N.B.—The above offer is only extended to the first **999,999** New Subscribers received. The *millionth* subscriber will have to pay full price. So please tell your friends and neighbors at once, that they may not be too late, for a million subscribers is not many (for us) and Sept. 30th (the last day of the offer) will soon arrive.



containing a great variety of items, including many good hints and suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

How to Reinit—Checks on New-York Banks or Bankers are best for large sums; made payable to the order of **Orange Judd & Co.**

Post-Office Money Orders may be obtained at nearly every county seat, in all the cities, and in many of the large towns. We consider them perfectly safe, and the best means of remitting fifty dollars or less, as thousands have been sent to us *without any loss*.

Registered Letters, under the new system, which went into effect June 1st, are a very safe means of sending small sums of money where P. O. Money Orders cannot be easily obtained. *Observe, the Registry fee*, as well as postage, *must be paid in stamps at the office where the letter is mailed*, or it will be liable to be sent to the Dead Letter Office. *Buy and affix the stamps both for postage and registry, put in the money and send the letter in the presence of the postmaster, and take his receipt for it.* Letters sent in this way to us are at our risk.

Postage.—To our published terms for the *American Agriculturist*, postage must in all cases be added when ordered to go out of the United States. For Canada, send twelve cents besides the subscription money with each subscriber. Everywhere in the United States, *three cents*, each quarter, or *twelve cents*, yearly, must be pre-paid at the Post-office where the paper is received.

\$10,000.00 Worth of New Engravings for \$1.50, or less.—The Publishers set apart \$10,000 to \$12,000 for illustrations in each volume. The number of engravings given in the *Agriculturist* during a single year, if brought together, would cover the side wall of a room of considerable dimensions, and not a few of these are beautiful as well as instructive. Though the paper is well filled with a variety of useful information, it is safe to say that the engravings are alone worth the small subscription price. They are not excelled in workmanship by any illustrated paper in the country. We have our own engraving-room and employ our own artists—the best to be found—which accounts for the excellent style. As stated above, every subscriber gets impressions from at least \$10,000 worth of new engravings, at the cost of only \$1.50 the single subscription fee for a year, and for even less when clubs are made up.

\$12,500 Worth of New Engravings for \$1.50, or less.—By reference to the above, and to the Publisher's announcement on this page, it will be seen that every new subscriber received this month will secure *five* quarters of a year for the price of one year, or at least \$12,500 worth of engravings for \$1.50, and for considerable less when clubs are made up.

A Liberal Offer is made to new subscribers this month, (see above.) One object is to begin the campaign for 1869 before the political excitement of October and November comes on. Again, every new subscriber who receives the paper for three months will be quite likely to bring many others with him at the beginning of the next volume.

The Texas Murrain.—The rapid spread and the sure and sudden fatality of this disease has justly alarmed the whole country. We have seen the danger for years and in the general apathy have not been silent, though forced by circumstances to be virtually inactive. Yet, in justice to the Publishers, we wish to chronicle the fact, that more than two years ago they offered to bear the expenses of a thorough investigation could such an one be undertaken by the gentlemen of the N. Y. College of Veterinary Surgeons. The Professors, however, have been so burdened with the labors of starting and carrying on this growing institution, that though anxious to do so have been unable to accept the offer.

Percheron Horses.—"C. R. M.," Prairie City, Nebraska. We know of no stock for sale in this country. We suppose animals suitable for breeding can be imported for about \$1,000 each, delivered in New York.

Merchant Turning Farmer.—"C. A. C.," Pittsburg, Pa., wishes to know if a merchant in the time of life, with a strong proclivity to rural pursuits and a capital of \$5,000, above the cost of a farm, can

expect to succeed in cultivating the soil. If he has succeeded as a merchant, there is little doubt that he will do well as a farmer. The same capacities underlie success in all kinds of business. Some of the best farmers we have are men bred to other pursuits. They have brought to the farm all that intelligence, industry, skill, and enterprise, which were matured in their earlier occupations, and they very soon mastered the new situation. "C. A. C." must expect to pay something for his education as a farmer, for he will make some mistakes; but if he has a taste for fine stock and loves the smell of the soil he will succeed. He will best learn the art upon the farm, and if he is without experience we would recommend him to secure an intelligent young man bred to the farm for his foreman. Let him read the agricultural papers and exercise his own judgment in practice. For books we refer him to our catalogue on another page.

Gardening for the South.—This work, which was delayed by the death of its author, Mr. W. N. White, Esq., of Georgia, is now in the hands of the printers, and will be ready as early as practicable. It is a very full treatise on vegetable and fruit gardening, with special instructions for the Southern States.

Horticultural Exhibitions.—One at looking over our list of fairs will be struck with the meagre list of Horticultural Exhibitions. It has been the especial business of one of our assistants to note down the announcements of fairs, whether made through circulars or published in the papers. It presents us with a very full list of Agricultural fairs and a very short one of those especially Horticultural. Secretaries of Horticultural Societies are the best fellows in the world, but they are so slow. We have no doubt that the Pennsylvania, Illinois and other societies will have autumnal shows, and that we shall get a notice about three days beforehand—too late to be of use to our readers.

The N. J. State Agricultural Society hold their fall Fair Sept. 29th, 30th and Oct. 1st and 2nd. The Executive Committee all determined to make this the largest fair ever held in New Jersey. Premium lists are now ready and will be forwarded upon application to the Committee, W. M. Force, Newark, N. J., J. R. Dunn, Newark, N. J., Benj. Haines, Elizabeth, N. J. The Society's grounds are permanent, and every effort will be made to make the exhibition complete in all respects. Last fall the grounds were in an unfinished state, but this year they are ready to accommodate stock, etc.

Sundry Hamburgs.—Hallet, Moore & Co., seem to have tired of "Sandy River Petroleum Stock," and have recently assumed a new name—"The New York Jewelers Co-Operative Union." Their plan of operation is the 5 per cent assessment, as before, the only change being in name. The prizes seem to consist mostly of "800 watches," and "diamonds." The per cent on the valuation is \$10, which they are anxious to get within 12 days from the serving of the notice. Their circulars give a pretended "editorial in the Herald." What Herald? This so-called "editorial" goes on to say: "Many of our best citizens received their presents on the spot," etc. We warn all persons not to be deceived; our "best citizens" or anybody else would find it difficult to get any "prize" in less than fifteen days after calling for it, if they got it at all. Dunbar & Reed announce the "great event of the season" in a "closing out sale of Bankrupt stock," etc. Their plan is to sell tickets at 50 cents each, and if the prize draw is taken, the ticket holder is to pay them \$2 for it. Their stock embraces everything in the Jewelry line, Music Boxes of all sorts and sizes, and pistols. Of course none but the most verdant will invest money in this very evident swindle. The "Metropolitan Gift Co.," Harper, Wilson & Co., are still operating. They give a long list of quotations under "Opinions of the Press." These notices of course never appeared, and cannot be found in the papers quoted from except as a part of their advertisement, and possibly they never occurred there. Such things, however, have weight with some, even if they appear only in an advertisement in a country paper. Such is the power of printers' ink. We caution all against them; they are false in their conception and are intended only to deceive the unwary. "Harper, Wilson & Co." are not to be found at the number given. We do not suppose any body will buy C. L. Van Allen's Eureka Oil after our notice of it some months ago, as it is a both worthless and dangerous compound. Milford, N. H., is a great place. It not only produces counterfeit money but one "Mansing" with his "Mutual Joint Stock Co. and Gift Association." This is all very nice, Mr. Manager Manning, but it won't do; people are not so "green" as to suppose you will give them \$10,000 for \$90, or any thing of the sort. Evans & Co. have "retired," and Isaac

E. Rose & Co., have taken up the management of the "World at Home." The proprietors present no new features to this very evident humbug. They still offer \$500.00 shawls, cloaks, etc., to each subscriber to their paper. The parties receiving the goods are to act as agents for their paper, and increase its circulation, etc. Of course none of our readers will bite at such a poorly baited hook. The President of the "Sandy River Petroleum Stock Co." presents a new plan. For \$2.00 he proposes to "strike a duplicate" of each certificate held by any party, and post the same for sale at the Brokers Board. This "stock" is not worth one cent to any body. We wonder how our "generous friends" will like the new postal law. Congress in an Act "To further amend the Postal Laws," passed July 27, 1893, Section 13, says "And be it further enacted, That it shall not be lawful to deposit in a post-office, to be sent by mail, any letter or circular concerning lotteries, so-called gift-concerts, or other similar enterprises offering prizes of any kind on any pretext whatever." Sending any Lottery Tickets, therefore, or Gift-Enterprise circulars in the mails, hereafter is an unlawful business, and our readers will take notice of the fact. We would advise all who are unfortunate as to have such letters sent them, and who know their contents to be of the character described, to return them unopened, to the Post Master, stating the fact to him, with the request that he send them at once to the dead letter office at Washington. We hope that the authorities will issue orders to Postmasters that when letters are received, the contents of which are known to be of the character of Gift Concert Enterprises to enclose them in a package to the dead letter office, and not deliver them to the parties to whom they are addressed. It is desired by the Department at Washington, that all the evidence bearing upon these swindling concerns be brought to their notice, so that justice may be dealt to those who indulge in this unlawful and wicked business.

"Two Wonders of the Age."—King Frost the fruit destroyer effectually conquered, and fruit now can be grown every year in any Northern climate, without injury from frost by premature budding. This is the heading of a circular of a chap, who in addition to that wonder has No. 3, which preserves trees, shrubs and vines. "In root, body, branch and bud from the attacks of any kind of vermin or insect," which is a very good thing to do. Of course the circular has certificates, what would a circular be without them? It is a little odd that these tree doctors never get a known horticulturist to sign their circulars. The names are very good ones, and doubtless useful to those who own them, but they do not carry any weight. We learn that the proprietor of the "Two Wonders" has sold nearly \$8,000 worth of county rights in a single county in Pennsylvania. If the stuff, or thing, or process is good for anything, the rest of the world will probably hear of it. Meanwhile we advise our readers to always let very hot things cool a little before they handle them, and thus avoid burnt fingers.

Hedge Trimmer.—If any one has a machine for trimming hedges by horse power he had better advertise it, as we have a loud call for it from the West.

Deep Planting of Trees.—"C. A. E.," finds the books advise to plant trees no deeper than they stood at the nursery, but "without stating the reason." The reason is that experience has shown that trees so planted usually do better than those planted deeply. While with many plants it seems to make but little difference how much of the stem is covered with earth, the bark of our fruit trees that has grown in the air is apt to become unhealthy if covered with earth.

Grapes and Pears.—"C. A. Eggert, Iowa. Why put them together? You can use your land but once, and why not half of it be all grapes and the other all pears? If the pears are standards they will soon make too much shade, and if dwarfs they may be put as close to each other as it would do to have the vines near to them. An economical use of land may often be made by planting strawberries, raspberries, or even peaches in a young orchard of standard pears, but this is with a view to removal before the pear trees need all the land, but the vines are intended to be in a measure permanent.

Yield of Pear Trees.—A subscriber asks us to state the average yield of pear trees ten years old. It depends so much upon the variety that no definite answer can be given. We know of some trees over ten years old that have not borne a bushel in their lives.

The Naomi Raspberry.—Mr. Geo. E. Hull, Cleveland, O., sent us some specimens of the Naomi Raspberry. They came in very good order considering the distance they had travelled, and were found to be of

excellent flavor. After their long journey it was necessary to utilize them at once, or we should have complied with the request of Mr. H. to show them to our horticultural friends. The variety originated from the seed with Mrs. Gov. Ward, Rockport, O. The committee on fruits of the Cincinnati Horticultural Society in July last concluded their report as follows: "We would recommend that as the best flavored and most firm of any red raspberry that has been brought within our observation recently." The Naomi proves hardy at Cleveland.

Grafting the Grape.—J. F. Kotsch, Kansas. Grafting is practised occasionally where one has a vine of inferior quality and wishes to change it. We described the process at length a few years ago. Before the ground freezes dig it away from the stock and cut it off at six inches below the surface. The cion should have about four inches of wood and one good eye; split the stock and insert it in the usual way of cleft grafting; tie firmly, but use no wax; fill in the cleft so as to leave the bud just above the surface; cover the graft with an inverted flowerpot or box, lay over some straw and cover the whole with a mound of earth. Do not uncover until freezing weather is over in spring. As not uncover until freezing weather is over in spring. As many have, of procuring wild stocks to graft for a vineyard. The plan is not advisable. No plants are so good as those grown from cuttings.

Forsyth's Composition.—"Subscriber," Alden, Iowa. We have Forsyth's old work, and are familiar with the matter you so kindly copy. Forsyth's discovery was thought a great one at the time (1791), and no doubt the treatment was serviceable. The decayed portions of a tree were carefully cut away, to leave a clean wound, which was covered with a plaster made of cow dung, lime rubbish and sand; after its application the plaster was sprinkled with bone dust. The trees recovered and credit was given to the materials of the composition, while really the removal of the decayed portion and protecting the wound from the weather did the business. The modern method of covering wounds with grafting wax, shellac varnish, &c., is much neater, more easily applied and equally effective.

Apples in Illinois.—At a recent meeting of the Alton Horticultural Society, it was the general opinion of the members that the apple crop was almost an entire failure, attributable to frosts in April.

Let Bugs Beware.—We are pleased to learn that Messrs. B. D. Walsh and C. V. Riley are to start a journal, the American Entomologist, to be published in St. Louis, by R. P. Stindley & Co. The paper is to be a monthly of 16 pages at \$1 per annum. The publishers say: "Although this publication is owned and edited exclusively by Western men, yet it is not intended to be in any wise local or sectional in its scope. Communications from all parts of the Union on the history and habits of noxious or beneficial insects are earnestly solicited, and the utmost attention will be paid by the editors to answering all questions from correspondents upon this subject, no matter whether they come from the East, the West, the North, or the South, and why never possible the best and most approved method of fighting the particular noxious insect will at the same time be briefly indicated." The enterprise is one to which we wish success.

Rat-tailed Radish.—Last month we allowed a correspondent to say that the Rat-tailed or Loop-podded Radish was a failure, and corroborated his statement from our own experience. We did not know that we were lying in the face of royalty. A correspondent of the London Gardener's Chronicle says: "Mr. Carmichael (Prince of Wales' gardener) told me that he always kept a regular supply of it, and that it was much used and relished at the Royal table, a fact surely worth knowing." So important "a fact," that Wales like the Rat-tail should not be confined to one side of the Atlantic—it being "surely worth knowing," we spread it abroad. The English papers contain much snobbishness like the above, which reads strangely to an American.

Turnip Flea-Beetles.—"S. T.," Orient, L. I. Various remedies are resorted to, to keep these pests in check. Among the safest and cheapest are slaked lime, or wood ashes, sprinkled upon the plants when the dew is on. The ashes would be quite sure to promote the growth of the bulbs, as well as destroy their enemies.

Cost of Raising Routs.—"L. G.," Shelburne, Vt.—In four statements made before Massachusetts County Agricultural Societies, the cost of Rutabagas per bushel is put at 8 cts., 9 cts., 8 cts., and 23 cts. The gentlemen who used the most manure and raised them at the rate of 750 and 900 bushels to the acre, respectively, got their turnips for 8 cts. a bushel.

The poor fellow whose turnips cost him 23 cts. a bushel raised only 374 bushels to the acre. The difference in the cost lay mainly in the manure and in the cultivation. There is a volume of wisdom in the facts here given.

Winter Radishes.—Mrs. C. K. M. The black and white winter radishes are usually sown about the middle of August, though if sown early this month they will probably make a fair crop. The Chinese Rose-colored Winter, is much superior to the varieties named, and it is not too late to sow it. Treat in all respects like turnips. Keep by burying them in a pit buried reach of frost, or in a cool cellar in barrels, with some earth thrown among them to keep from drying up.

Use Black Ink.—It is very trying to the eyes and equally so to the patience to endeavor to make out a letter written in ink the color of which is a pale brown or dun. Good black ink costs but little.

Patented Walks and other Patents.—A friend at Troy, O., writes us a long and interesting account of a patented Asphalt walk, evidently thinking that its introduction would be a public benefit. We do not publish his communication, as our advertising columns are the place in which such things are made known. When the right to make, use, or sell a thing, rests exclusively in the hands of our person, he has, if the article be good for anything, abundant means for making it known, and journals do not feel it a part of their duty to advertise his wares.

Worms on Arbor Vites.—V. G. F. Newport, Del. The specimens are the Basket or Drop-worms. (*Olfiteus confervarum*) very troublesome on many trees. The method to which we have resorted, hand-picking, is the only way to get rid of them.

Do Locusts Sting?—"R. W.," Patterson, N. J. No, they do not. The common Locust or Harvest fly, (*Cicada*), and the 17-year Locust are as harmless to handle as house flies, and neither bite nor sting. During their short lives they neither eat nor drink, but simply prepare for laying and lay their eggs. The damage they do is to the trees wherein the eggs are deposited. The true Locust (*Grillix*), we would properly term a grasshopper, and though it eats voraciously, it can neither sting or bite to harm any one. Children frequently report themselves stung by insects which by their description might be locusts, but they probably mistake bees or hornets of some kind for them.

White Huckleberries.—C. H. B., Providence, R. I. These are sometimes found, though they are not very common. We have seen them several times in Rhode Island. It would be well for some one to experiment in the culture of this white variety.

Peach Trees.—F. Mars, Milford, Mass. The trouble described is the "curl," by some attributed to plant lice, and by others to sudden atmospheric changes. We doubt if insects have anything to do with it. Good cultivation is the only remedy. Mr. M. uses upon his trees soda containing considerable sal soda with marked effect in promoting growth. This should not be continued any later; it is not desirable to prolong the growing season, as the wood will not ripen properly.

"Tubes" in an Old Log.—A. Lear, Minnesota. The tubes made of leaves nicely rolled together contained each a grub or larva of some insect, probably a bee or wasp, but we cannot tell which one.

Dried Sweet Corn.—The canning of corn cannot be successfully done in families, but dried corn is nearly as good if properly done, and can be had by all. The excellence of this depends quite as much upon the time of picking, as upon the method of curing. If too old, no process of drying will make it tender and savory. The ears should be plucked in the milk, their best condition for eating when fresh. With a sharp knife split the rows of kernels, and cut from the cob. Spread in iron pans and place in the oven to drive off a part of the moisture. Stir well to keep from burning, and when thoroughly heated, spread upon sheets in the sun to dry. It must be thoroughly dry when put away, and must be kept in a dry place. Another method is to boil the fresh picked corn five minutes, then split the kernels and cut from the cob, and spread in the sun to dry. It is good cooked as a vegetable in winter, and still better made with Lima beans, or even common beans, into succotash. "Subscriber," Bloomfield, Iowa, boils the corn, cuts the grain one half off, and scrapes off that which remains attached to the cob. The drying is done in a shallow box, covered with a hot-bed sash, set sloping to catch the sun,

Alanthus Trees.—H. C. Hermann, of Delaware Co., Pa., writes as that in pursuing experiments with the Alanthus silk-worm he raised some Alanthus trees. The seed was collected in September, sowed the following March, and in two years the trees averaged 9 feet in height, very straight and smooth, and made good bean poles. The labor of collecting the seed is little, Mr. H. says a boy collected a barrel of it in an hour.

Pruning the Blackberry.—The best cultivators cut out the old canes as soon as they have yielded their crop of fruit, though it is the practice of many to defer it until spring. At whatever time it is done the operator is pretty sure to wish for the discovery of a "thornless blackberry," and if he has much work among the bushes he will soon be scratched into looking about for some implement that will enable him to work with more comfort. Pruning shears with long handles, which are used for the purpose, are sold by the implement dealers, or a hooked knife like the one in the engraving may be fixed to a handle and will answer quite as well. The knife should be made of good steel, and it will be found useful not only for cutting the canes, but for pulling them out of the way when severed. At the time of pruning, pinch in the side branches upon the new canes.

Plants Named.—J. W. Russell, Tolland Co., Ct. The Hop Clover, *Trifolium aparinum*, an annual yellow-flowered clover introduced from Europe, and not rare as a weed. . . Mrs. R. T. H. P. Henry Co., Ill. The Lead-plant, *Amorpha canescens*, which has long been supposed to indicate the presence of lead ore. . . R. S. S., Sangerites, N. Y. No. 2, Monseer Chickweed, *Cerastium vulgatum*, No. 1, not found. . . Miss C. A. B., Syngenta, Mass. See answer to P. L. C. last month. . . W. H. Genoa, O. Squirrel-tail Grass, *Hordeum jubatum*, which we never before heard charged with being troublesome; good cultivation will eradicate it. . . S. L. L., Chatham, Iowa, *Tephrosia virginica*, called both Goats' Rue and Catgut. . . J. G. W., Hatfield, Mass. From the description we guess your tree to be the Hackberry, *Celtis occidentalis*; the specimens did not reach us. Try again. . . Mrs. M. D. D., Rock Island, Illinois. The Wild Balsam Apple, *Echinocystis lobata*. Sometimes cultivated to cover trellises. W. L., Orange, Edwards Co., Ill. *Kohlrutaria paniculata*, a beautiful ornamental tree, which is but little known. . . J. B., Lima Co., O. *Whitlaria grandiflora*, a handsome blue-flowered hardy annual from California, quite common in gardens. . . M. R. A., Elliot, Me. No. 1, Chokeberry, *Pyrus arbutifolia*, No. 2, Slender Gerardia, *G. tenuifolia*, No. 3, Canada Hawk-weed, *Ibericum Canadense*.

The Farmers' Club on Botany.—At a meeting of the Club in July, one member hoped that botany would be taught in common schools; whereupon there was an outflow of wisdom. One speaker said: "I believe that botany will have to be entirely rewritten before it can be used in schools. We don't want so much science, but a more practical system than the one now in use." Another added: "I have looked in Wood's and Mrs. Lincoln's botany, but could not find how trees grow. There were plenty of descriptions of small, insignificant, and worthless weeds, but very little about our most useful plants. This is not as it should be; for the most valuable plant should receive the greatest attention." Of course all the botanists from Linnaeus to Gray knew botany. We hope that the Club will get up a system of botany to suit their needs, without "so much science" in it. The multiplication table is tough to some, but it pays to learn it, and if it could only be shown that botany would "pay," those who talk about it as these Club people do, would very soon find it "just as easy."

Double Peaches.—J. E. E., Gettysburg, O., writes that a variety of peach known there as Yellow Free-stone produced very few single peaches, but the fruit was almost all "from two to six double." Nearly all the double fruit has fallen. Mr. E. wishes to know the cause of this phenomenon—which of course we are unable to answer. There is one point that would be interesting to know: Do these double peaches come from a mal-formed blossom, or are they apparently double by the crowding together and cohering of the fruit when young. It would be well to observe the trees next spring, and if the blossoms appear of unusual shape we would like specimens.

Whitlock's Horticultural Recorder.—The second volume of Whitlock's Advertiser appears enlarged, improved, and with the above title. Mr. A. S. Fuller is the editor, and the Magazine in the variety and value of its contents takes rank among the best

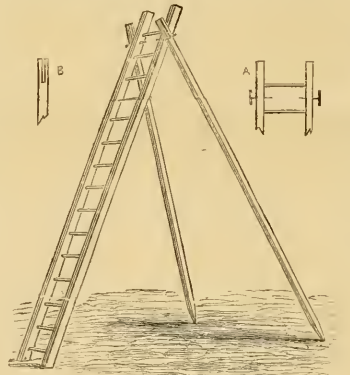
publications of the day. The magazines which have so long occupied the ground must keep an eye on this new comer or he may yet "go to the head of his class."

A Grape Vine Beetle.—"A. D. B.," Princeton, N. J. The beetle that has destroyed the leaves on your Delaware and Dianas is apparently *Anomala lucicola*, the Light-loving Anomala. It is related to the May Beetle, but is much smaller. Shaking the beetles from the vines, catching on sheets and destroying, is most likely the only reliable means of stopping their work.

The Work of Locusts.—A. H. Martin, Charlotte, N. C., and A. L. Griffith, Jasper, Tenn., send us twigs showing the excavations made by the 17-year locusts in depositing their eggs. The habits of the insect are described in the *Agriculturist* for October, 1866.

Lima Beans.—These beans make slow progress in the country for an article admitted to be the best of its family. They are an excellent vegetable whether cooked in the green or dry state, and are perhaps the best substitute we have for the potato. If dry, they should be soaked over night. Boil two hours or until soft. After boiling they are admirable fried in butter.

Fruit-Gatherer's Ladder.—We find in the London Journal of Horticulture a plan for converting a common ladder into a self-supporting one, which for low trees will answer better than our method of sustaining by guy ropes. The article is contributed by an "Amateur" who used a ladder 12 feet long. Two stays or props of equal length of the ladder are made of 1½ inch stuff, 2½ inches wide at the foot, tapering above and pointed below. At the upper end of these props slots (B) are cut, and were we to make them we should strengthen them by an iron band or a rivet, to prevent splitting. Upon each side of the ladder near the top is inserted a



T-shaped pin, which screws into a nut which is sunk into the side pieces, as seen at A. These pins can be removed when the ladder is used for other purposes. When used for fruit picking it is put together as shown in the figure. The ladder is placed where needed and the props put in position to hold it there by simply slipping the slots under the pins, as in the figure. The props being independent of each other can be introduced between the branches if necessary. We might have copied this ladder without giving credit, if we followed the example of the *Journal of Horticulture*, which in its issue of July 30th takes an article and figure of a Handy and Powerful Lever from the *Agriculturist* without the least intimation that they are not original. But that is not our way.

Fine Gladioluses.—Mr. Geo. Such, of South Amboy, N. J., has the gladioluses as one of his specialties. He exhibited some at our office, which for size of spike and beauty of flower we have not seen equaled.

The Thursday Shows and Meetings.—Mr. Whitlock has done a good thing in offering facilities for weekly exhibitions and club meetings. Similar gatherings were held at H. Park Row until the space could no longer be spared. We invite those who used to find those meetings pleasant to add the present ones by their attendance. The central location—in the *Agriculturist* Building 245 Broadway—makes it very convenient for business men, as well as for those who are visiting the city. Understand that the whole thing is free, there being no charge of any kind. There is like-

wise no competition for prizes. Fruits and flowers are shown, compared and talked about, and any one interested in these subjects can hardly fail to get some information or impart some. We hope our friends who visit the city will call in on Thursdays at noon, bring some specimens if possible, and at any rate give their presence.

Cultivated and Incultivated Strawberries.—R. M. C., Moorport, Del., writes that while well cultivated strawberries produced a poor crop, the same variety (Wilson) without any cultivation ripened earlier. "The incultivated beds had a heavy growth of grass and weeds, which were killed by the fall frosts, and served as a winter protection, followed in the spring by white clover and weeds, which were in vigorous growth at the time of the ripening of the fruit. Was the increased yield caused by the winter protection thus afforded, and was the early ripening of the fruit caused by the same, or was it caused by the green growth during the ripening season?" We should attribute the better condition of the weeds beds to the protection afforded by the dead grass, and cannot see how the growth of weeds this Spring could help the early ripening.

An Odd Raspberry.—G. Underwood, Pittston, (no State,) writes that he found a raspberry with a double fruit, and transferred it to his garden, where it maintains this character. The stem is flat and spreads out at the top in a fan shape. From the description, we judge this to be a case of "fasciation," which is not rare in plants. Parts that are usually distinct become joined together. It often occurs with snowdrops, Japan lilies, &c. Whether this variety of raspberry will prove valuable as well as curious, experience will determine. We hope to hear more of it.

The Tomato Question again opens upon us, and we shall try to give all sides a fair hearing. In discussing the earliness and productiveness of the Tomato we must bear in mind that soil, situation and climate have their effects, and that a report from the light and sandy soils of Long Island and New Jersey will not be likely to agree with one from the rich prairie gardens. Mr. Jas. Perkins, Newmarket, N. J., sends us specimens (Aug. 1st) of Cedar Hill and New York Red. Seeds sown April 1st., plants set out May 25th. Fruit ripe in 122 days from sowing—too long a time by 10 or 15 days on account of spring rains. Mr. P. thinks the Cedar Hill of good flavor and density and valuable as an early variety, and the N. Y. Red the greatest cropper. . . Louis Ritz, Plainville, Ohio, sends an account of a carefully made experiment with Keyes, Cedar Hill, Early York, Large Smooth Red, and Tilden. The seeds were sown at the same time and the plants treated in all respects alike, with the following results: "The Keyes is, no doubt, the earliest of all, and yields largely; but only the first tomatoes are of a fair size, the succeeding ones growing smaller and smaller. I think it would pay to plant the Keyes, for early use, close together, say one or one and a half feet apart, and pick all the blossoms except the two or three first clusters, and it would, no doubt, yield a paying crop. The Early York is early, but a poor yielder. The Extra Early is not as early by a few days, but more profitable, yielding largely; not quite as solid as the Keyes, but of fair size and good flavor. The Cedar Hill is a good bearer, fair sized, rather smooth, but tender, and on that account less profitable for market. It is, however, the best early tomato for family use. The Large Smooth Red and Tilden are later than the other varieties, but furnish finer and larger fruit, and for marketing are more profitable."

Harvesting Beans.—J. G. Bailey, Rockingham Co., N. H., writes that he has a method of harvesting beans that he prefers to those we have recently published. We have praised the way he describes in harvesting a small lot, and were much pleased with it. "Stakes 2 inches in diameter, 7 or 8 feet long, and pointed at one end, are set firmly in the ground about 8 inches apart. The stakes are set about a rod from the end of the row, room being made for them by pulling a few hills. Bind a wither around the stakes a foot above the ground. Pull the beans, holding them by the roots, and when the hands are full take them to the stakes, lay them between the stakes, putting in the roots of each handful in an opposite direction from those of the preceding one, letting them lap sufficiently to hold them. When the stakes are filled to the height of 5 or 6 feet, put on another wither, and continue to fill as high as you can reach. The stakes should spread apart gradually, leaving the stack flaring at the top. When the beans are cured two men can pull up a stack and place it on a wagon. In thrashing lay the sticks on the floor, thrash one side, then turn them over and thrash the other. Beans properly stacked may be left out for a long time. The stakes, if of durable timber, may be housed and answer for several years."

Wheat Weevil and Clover.—A gentleman in Pulaski Co., Ind., sent us a communication in which he asserts that red clover is the nursery of the "wheat weevil, also called midge," and advises farmers to abstain from sowing clover if they would save their wheat. Having occasion to send to the eminent entomologist, B. D. Walsh, Esq., we enclosed our correspondent's letter, to which Mr. W. replies as follows: "Your correspondent suggests that clover is the nursery of the Wheat Midge, *alias* the Red Weevil, *alias* the Weevil; and hence infers that farmers must quit growing clover, if they wish to be free from this pest. He is altogether mistaken. The Wheat Midge can exist only in certain species of the grass family (*Gramineae*), and certainly cannot breed in clover, which belongs to an entirely distinct botanical family (*Leguminosae*) the Pulse family. If such men as your correspondent would like to school themselves for a few months before settling up as school-masters in entomological matters, the world would be spared a great deal of ignorant balderdash. There is a very small snout beetle (*Aphidius*), the larva of which breeds in the heads of red clover. The gentleman perhaps happened upon this larva, and jumped to the conclusion that it must be that of the wheat midge, though the two are as unlike each other as a Rose and a Peony."

Potato Bugs.—**Unsafe Advice.**—The following is going the rounds of the press. "Sure death to Potato Bugs: Take 1 lb. Paris green, 2 lbs. pulverized lime. Mix together, and sprinkle the vines." We consider this unsafe, as there is no intimation of the fact, not generally known, that Paris green is a compound of arsenic and copper, and a deadly poison. Such things should never be recommended without a full statement of their properties, so that one may know with what he is dealing. The poison would be very likely to kill the potato bugs, but how about the vines?

Time for Wheat.—We wish the readers of the *American Agriculturist* would try the effect of time on the wheat crop. A few square rods would be enough for the experiment. Put a bushel of fresh slaked lime to a square rod and note the effect. There has been very general complaint the past harvest of shrunken wheat. It is attributed to the hot weather in July; but the fact that in many instances where the land was in good condition the wheat was plump and fine proves that it is not wholly due to the climate, or at least that the difficulty may be overcome. It is well known that liming the soil has a beneficial effect, especially in stiffening the straw and producing a full, plump berry. We believe the time has come when much of our wheat land, even to the limestone regions, would be greatly benefited by liming.

Plaster, How Prepared for Land.—"T. W. E." Salt Lake City. The only preparation which Gypsum needs for sowing is pulverizing. It is ground in mills made for the purpose, and is burned only when used for making casts, hard finish, etc. Your better course would probably be to purchase the machinery and put up a mill. It acts most beneficially upon land remote from the sea. Sown at the rate of one or two bushels per acre, it greatly increases the yield of grass and in some of the grazing districts it is considered the cheapest and best fertilizer that can be used.

Bone Mill.—"E. H. C." who wrote us some time since inquiring for a cheap bone mill, is informed that the article has not been invented. The bones are strong and require great power to crush them. It would take ten or twelve horse power to grind bones, and a suitable mill would cost several hundred dollars. Persons having good bone-mills to sell should advertise.

Now is the Time to Destroy Red-Root.—On many wheat farms Red-root, or Pigeon Weed (*Lithospermum arvense*) is a great pest. The seed germinates in September and October, and the plants come into flower early in the following summer. They are easily destroyed, but the difficulty lies in getting at them. They are seldom found except in winter wheat, and the only way to kill them is by hoeing the wheat or pulling out the red-root by hand. Old farmers say the only way to kill them is to make the red-root think that you are going to sow the land to wheat in the fall, and then not do it. The red-root will start up, and by plowing the land in the spring the plants are all destroyed. Cultivating among corn does not free the land from red-root, because it cannot be done late in August or September. Barley is sown after the corn and the land plowed after harvest and sown to winter wheat. The red-root then springs up and seriously injures the crop. Now, if the land for corn could be broken up in August or September, the red-root would start, and would be killed by the plowing next spring. Or, a two or three year old

clover sod might be broken up in August or September, and then sown to barley the next spring, followed with winter wheat. The difficulty is that at this season the land is often so hard that it is difficult to break it up. But even if the land is plowed very imperfectly and not more than two or three inches deep, it will effect the object. The hot sun will kill the roots of grass and weeds, and when rain comes the red-root will start. As the land has not been plowed since it was in wheat the seeds of red-root are near the surface, and shallow plowing would be better than deep plowing. But later in the fall, plow the land again deep and well, and let it lay rough for the winter. Land so treated will be likely to give a splendid crop of barley and a good wheat crop afterwards, and we get rid of the troublesome red-root into the bargain.

Ice House.—W. A. Burton, Iowa, wants hints on building an ice and milk-house together. He will find a very good plan of an ice-house in the October *Agriculturist*, 1866, with six illustrations, and several valuable hints in November 1867. These conveniences, a milk and ice-house, can very well be put at the end of the L, where a house has this appendage. The milk room might open into the L, and it would save some labor to have a small door or opening from the ice-house directly into the milk room. But the large door for filling should be upon the outside. If the drainage and packing are good, the material of which the house is made is of secondary importance. The room for holding the ice for a family should be about 12 feet square and 12 feet between joists. This will give plenty of ice for the whole season, and the extra expense of filling, where the ice pond is convenient, will be small. We are glad to know that the luxury of ice in summer is more generally appreciated by farmers.

Mechanic Turning Farmer.—"D. D. H., Richmond, Ind., wishes to know if a young mechanic who takes a lively interest in agriculture, and especially in horticultural pursuits, would do well to go to Iowa and farm. If he had a capital of a thousand dollars to begin with he would probably succeed. Why not buy a few acres in the vicinity of some one of the thriving cities of that State, and start fruit and vegetable gardening? Perhaps Richmond might be just the place for this business. It pays well, and can be indefinitely extended.

Canada Thistles—How to Kill.—"W. H. H." New Milford, Conn., says, cutting them with the hoe even with the ground every two weeks during the period of growth will surely kill them. I have repeatedly destroyed patches of thistles in this way, and in only one instance have I seen a thistle the second season." This is a laborious process; but to leave the thistles to multiply will make still more labor.

Notes from Colorado.—A well known hotanist, now on a scientific exploration, writes us from Denver as follows: "On several of these streams, especially the Big Thompson, St. Vrain and Boulder Creek there is a considerable amount of cultivation in the valleys, by means of ditches, which lead off the water from the main stream into the fields. We saw many very fine fields of grain. One man told me he had 30 acres of oats which would yield 75 bushels per acre. But it is yet a mystery to me, how the many millions of acres contained in these arid plains are to be made productive of human food except in the way of raising cattle, etc. I have looked with considerable interest and care to see what kinds of grasses cover the plains. Several species of *Triticum* are found. *Triticum repens* seems to be the principal grass. This grass, the Couch or Quack, which gives farmers so much trouble at the East from its difficulty of being eradicated, seems to be Heaven's boon to the Plains. However, as we approach Denver from Cheyenne, the Buffalo grass (*Buchloe distachyoides*) and *Munroa squarrosa* become quite abundant, and in the valleys are large patches of a grass looking at a distance like our Red top, but what it is I have not yet satisfied myself."

The Second Annual Report of the Secretary of the Connecticut Board of Agriculture.—This volume is made up principally of the reports of the discussions and the lectures of Professors Verrill and Brewer at the meeting of the Board held at Hartford, last January. The discussions on breeds of cattle, dairy husbandry, and feeding cattle, brought out a great variety of useful information from the principal breeders and dairymen of the State. The full reports of the lectures, with illustrations, is a valuable feature of the work. We trust the Board have taken measures to secure a wide circulation of their report among the people of the State, for the audiences that heard these very instructive lectures were exceedingly small. Judging from the attendance both at New Haven and at Hartford,

the city is not the best place to hold these meetings. Almost any rural village would have given hundreds of hearers, where the city afforded tens. The volume is from the press of Case, Lockwood & Brainard, Hartford.

Reclaiming a Swamp.—"G. L." Bridgewater, Vt., wishes to know how to proceed in reclaiming a swamp, the soil of which is black muck to the depth of a foot, and the subsoil hard sand and clay. The first step is to find an outlet, and provide for the escape of the water. Get four feet if you can, but attempt draining if you can have only two. Cut off all water from the adjacent upland by a drain near the edge, to the full depth of the fall at the outlet. Then put a main drain through the middle, and cross drains about two rods apart emptying into the main and side drains. Tile are the cheapest in the end, because they save so much labor in the digging of the ditches, but it is better to use stone or wood than not to drain at all. The sand might be spread upon the surface as a top-dressing, after the drains are completed. It is not necessary to do the whole job in one season. Begin at the outlet and make thorough work as far as you go. We recommend to all persons undertaking draining, Waring's work on "Draining for Profit," published by Orange Judd & Co. Price, post-paid, \$1.50.

Wild Mustard or Kale—How to Kill.—"W. P. S." Blackville, N. Y. The best way to eradicate this and all weeds is by persistent cultivation. If the ground is very foul, we would recommend a summer fallow, plowing and harrowing the ground alternately, as often as every fortnight. Every time the surface of the soil is disturbed a new crop of seed is brought into those conditions in which it will vegetate, and the subsequent harrowing or plowing destroys them. In a fallow ten or a dozen crops may be destroyed in a season, and it is very much cheaper to destroy them with two horses on a grand scale than with two fingers among cultivated crops. Make a business of weed killing.

Cream Skimmer for Deep Vessels.—The question has often been mooted whether or not cream would be lost if milk were set for cream to rise, in deep vessels. Experiments have given very diverse results, and what the reason was, nobody knew. Thorough cooling of milk as soon as it comes from the cow, not by immersing the cans in cold water or putting ice in the milk, but by passing through a cooler, is found to check all tendency to sour for a long time. On milk thus treated cream will rise through the depth of a foot, or more, as easily as through milk three inches deep, set warm from the cow in ordinary pans. The coolers are patented, but the cream is removed by a simple dipper, which we figure. It bears the name of the Orange Co. Cream Dipper, and is made of a half circle of tin, bent around the centre of the circle, and the straight edges lapped and soldered, with a wire for a handle. This is dipped into the milk after wetting in water; the cream parts around it, and flows into it when the edge sinks low enough. Thus, all is easily removed. The dipper is useful for taking grease from a pot of hot soup, and for any other purpose when a light liquid is to be removed from a denser one. The method of milk cooling above alluded to recommends itself to all who sell milk, or set it for butter.



Fresh Fish Compost—How to Prepare It.—"A. D. M." Hyannis, Mass., complains that turnips will not grow in a compost made of fresh fish and sandy loam. He says: "The seeds germinate, but do not grow. A neighbor tells me it is the oil that makes the trouble, and says if the fish had laid in the heap one year they would have done better." Our diagnosis of the case would be a little different from the neighbor's. The oil is of little benefit to vegetation, and for this reason fish scrap, after the oil is pressed out, is worth about as much for manure as the whole fish. If there is not an oil factory at Hyannis, there ought to be immediately, and the oil be saved. The compost was made with sandy loam, and there was not enough of carbon in it to absorb all the ammonia or to divide the fish. The manure was too powerful, and burnt up the roots of the turnips, as fast as they formed. Peat and muck are much better absorbents and dividers for fresh fish, and even of these at least five tons should be used to one of fish, and the compost should be forked over twice, in a thorough manner, before it is used. The compost unquestionably improves by age until the fish are entirely decomposed. Lime and ashes are not wanted in the heap, but are better applied to the land. See Volume, XV, 1856, pp. 249 and 272.

Dairying at the South.—"J., East Tennessee. Dairying can be carried on to great advantage in all the mountainous districts. A cheese factory has been established at Asheville in North Carolina and is doing well. About 8,000 pounds of cheese were made in May and June, and the cheese sells at 20 cts. per pound in the home market. The managers of the dairy came from the North, and there are plenty more ready to go.

Fish Guano—Value of It.—"E. B. G., Pa. The statement that "one ton of fish guano mixed with a hundred loads of sods is worth as much as a hundred loads of stable manure" is rather strong. It contains from three to ten per cent of ammonia, and sells from twenty to fifty dollars a ton, according to its fineness and dryness. It is the cheapest form of ammonia we know of.

Wheat in the Sea-board States.—"H. Poor, who has been preaching wheat and raising it these twenty years, writes us: "It is a well ascertained fact, that spring and winter wheat can be raised abundantly in all the New England States. Farmers need no longer doubt the capacity of their soil to give them their bread. If short of manure, bone dust and other fertilizers are plenty and cheap. Four bushels of wheat are equal to a barrel of flour." The secret of success is manure applied to well drained soils. Drill in the wheat and cultivate it. We believe statistics show an increase of wheat raising in the older States.

Steaming Food for Cattle.—"J. H. C., Augusta, Ill. Nothing but steam is wanted to cook hay, or any other kind of food. Steam under pressure is much hotter than water, and, of course, will cook more rapidly. The difficulty may be in not having your box, or steaming vat, tight enough. There is no particular danger of steaming hay too much. The softer it is made, the more easily it is digested.

Bone Phosphate and Superphosphate.—"J. K. P., Cold Spring, asks, 1st. If Professor Johnson's formula for making superphosphate in the June *Agriculturist* would apply to a large quantity? 2nd. The price of phosphate and fish guano? 3d. If the Charleston deposit could be used for making superphosphate? 4. The formula mentioned is good for any quantity. It could be made somewhat cheaper at the factory on a large scale, because the materials could be purchased at the wholesale price and the factory would have conveniences for handling that farmers generally do not have. 2. Baker's Island guano is not in market. Fish as scrap \$25, and floor ground and dried \$45. 3. The Charleston deposit is a good bone phosphate according to the analyses given, and a company is formed to manufacture fertilizers from it.

What Variety of Wheat to Sow.

This depends on the character and condition of the soil. Shorthorn cattle, that have been bred for the purpose of taking on flesh rapidly, require rich food and plenty of it, and no sensible farmer thinks of keeping them on a poor, scant pasture. He selects a breed adapted to his land. It is so with varieties of wheat. Some require more and richer food than others. Take a variety that, with a sufficient quantity of appropriate food, will produce forty bushels of choice wheat per acre, and sow it on poor land, where it cannot get food enough to form twenty bushels, and what will be the result? Let the shrunken grain of the past harvest answer.

We know two farmers in one of the best wheat-growing counties of Western New York, who have just harvested and sold their wheat. One had thirteen bushels of wheat per acre, that weighed 54 lbs. per bushel; the other had 37 bushels, that weighed 62½ lbs. per bushel. The former was glad to get \$1.80 per bushel for his crop, and the other sold his at the same time for \$2.60 per bushel. One crop brought \$21.16 per acre, the other brought \$100.50 per acre. In the same neighborhood there are two farmers that last fall had two litters of pigs from good common sows, crossed with a thoroughbred Essex boar. The one farmer fed the sows liberally, and the little pigs had the run of a barn-yard during the winter, where cattle were fed on grain and clover hay. The pigs soon learned to eat the heads of clover, and on this and the grain they picked up, thrived astonishingly. During the summer they had the run of a good clover lot, with the waste of the house and sour milk, and to-day would sell to the butcher for \$30 a head. The other litter belonged to a man who thinks that "a sow to breed well must be kept thin," and who winters his cattle on straw, and lets his pigs have the run of the barn-yard in winter, and of the road-side in summer. This litter of pigs to-day, though the same age and

of the same breed as the others, would be dear at \$6 a head. Naturally enough, he says that "Essex hogs are a humbug." And he is right, for his style of feeding common hogs would be better. They will not grow as fast on rich food, nor suffer as much from a scanty supply. It is just so with varieties or breeds of wheat. We must select those adapted to the conditions in which they are to be grown. If you have a very choice piece of land, capable of producing 35 bushels of white wheat per acre, it would be unwise to sow it with Mediterranean wheat. On the other hand, if you have a poor run down, neglected, half-tilled weedy piece, that in all probability will not produce more than 15 bushels of Mediterranean, it would be unwise to sow it with Diehl or Soules. It would be like turning a flock of Cotswold sheep into a hilly pasture, where Merinos could hardly get a scanty subsistence.

The farmer who got one hundred dollars an acre for his wheat has no better land naturally than the one who got less than twenty two dollars an acre. The climate is the same, and there is no other difference except in the management. One cultivates thoroughly and manures highly. He employs a good deal of hired labor. Does not work much himself, but sees that those he hires earn their money. He has taken the prize for the best farm in the State, and is one of the most thorough, energetic and prosperous farmers in the country. His land is clean and rich, and no matter what the season is, he has almost invariably excellent crops. We have heard him say that he believed he could make a good crop of corn if not a drop of rain fell from the time it was planted till it was harvested. He would depend on frequent cultivation, keeping the ground mellow and not suffering a weed to grow. His land is as rich as it was when first cleared, and he can raise just as good wheat. It is not owing to the variety, for the kind he raises is the good, old-fashioned Soules, that so often fails of late with ordinary treatment.

In view of the state of our finances, the general stagnation of trade, manufactures and commerce, combined with high prices for nearly all the necessities of life, we could almost wish that we had, for a year or two, a choice variety of wheat that would give large returns for poor treatment. But there is no such variety, and it is vain to search for it. The only way to raise good wheat is by good culture. Make the land right and then get the best variety to be found. If the land is poor and you have not time to enrich it, be content with sowing an inferior variety. It will do better than the choicer kinds, which need richer food and better treatment. And in the meantime, make calculations for the harvest of 1870. Select a small piece of the best land you have, and if it is not clean break it up this fall and plow it again early next spring and again after the corn is planted; cultivate, harrow and roll till every weed is destroyed. Then plow again in July and again just before sowing. Drill in two bushels of the choicest variety of white wheat you can find, and you may reasonably expect a good crop, and the land will not forget such treatment for years. If sowed with clover, it will give a grand crop of hay, and if this is cut early a crop of clover seed may be expected that will alone pay for all the labor of the summer fallow. Will some of our readers figure up the difference in the profits of a crop of wheat that brings \$100 per acre and one that brings only \$21 per acre?

Texas Murrain or the Spanish Fever.

We are a selfish and improvident people. We have received warning after warning. We have known of this terrible murrain by which the Texas herdsmen has seen his cattle swept away by the hundred in a night. We have known how it has dealt destruction to the cattle of Missouri and Kansas, whose grazing grounds were annually traversed by herds from Texas. We have even seen the disease on the hither side of the Mississippi, when it followed the trail of Texas cattle into Kentucky in 1866. Yet the General Government took no steps to have it investigated, no State Government has looked to the matter. Missouri and Kansas passed laws prohibiting driving of diseased cattle through those States; but these Texas steers are not to appearance diseased, and so far as we know the only sanitary measures so far attempted, have been those of the uprising of the farmers along the lines of travel, and the putting a sudden end to the traffic by prohibitions enforced by powder and ball. In the *Agricultural Annual* for 1867, Dr. John H. Rice, of St. Louis, described the disease particularly, and though the article be brief, it is more to the point than many of the labored dissertations which have crowded the press since the appearance of the murrain in Illinois and along the great railway lines from Cairo, Ill., to Providence, R. I., and which caused so great excitement and alarm last month. This visitation is so sudden and locally destructive that the people are aroused to the importance of investigation and knowing something about

this alarming and fatal disease besides its results.

The facts are briefly as follows: Texas cattle have been during the summer brought up the Mississippi in great numbers and landed at St. Louis, Mo., Cairo, Ill., New Albany, Ind., and at other convenient railroad termini, where they have been densely crowded on the steamers, not fed nor watered regularly, and when landed turned out to graze and recuperate before being shipped by rail, or driven into the interior or to market. The cattle, chiefly cows, which followed the Texan cattle upon the grazing grounds, or which picked up the hay and corn left by them in the yards, after they were driven off, shortly exhibited in great numbers symptoms of disease, and soon after died. Those familiar with the Spanish fever pronounced it to be unmistakably that malady.

The Texas beeves appeared tolerably well. Cattle simply coming in contact with them have not usually taken the disease, and according to the facts now known, it is rarely communicated in that way. Northern animals crossing their trail or on their pastures, take the disease and die with it, while the Texans which communicated it continue a long time apparently well. In Northern stock the incubation of the disease,—that is the time it hides itself after the exposure to infection before it breaks out—is variable, varying from a few days to several weeks; while if not slaughtered before, the Texans may not be struck down by it for months. The disease is communicated only by Texan cattle to Northern ones so far as reported, not by home cattle to home cattle. If communicated, it is possibly in that torpid, chronic form which the Texan cattle have, and which is so long in developing. The disease appears to be uniformly taken by cattle grazing on the same ground or standing in the same yards where Texas cattle have been. The diseased Texas herds are probably those which have arrived since the very hot weather. Those received early in the season have neither communicated nor developed disease, so far as we have seen the reports.

We greatly rejoice in the general alarm, because so many people are brought to agree with us that "this thing has gone far enough," and because we hope that something will now be done to shield all our citizens effectually from the disease. We must say we feel no very great concern as yet for the safety of the herds of the country. Texas cattle are well known by their peculiar build, wide coarse horns, etc. Drovers of them will not be moved at present except perhaps by rail to the market. Diseased Northern herds will shortly run their course—very few live, and those are said to lose their hair in patches, or all over their bodies. If cattle take the disease only as stated, the fact will soon be known and guarded against; the most important fact of all is, *the first severe frost puts an end to the infection.*

Symptoms.—An animal acutely attacked draws itself up, bows its back; its head falls; its ears droop; its eyes are dull; the coat is staring. It refuses food, passes blood or is constipated, and the urine is very dark. It shivers as if cold. Its respiration is labored, and it often runs at the eyes and nose. Cattle suffering with the Spanish fever have usually great thirst. Dr. Rice says: "In all the cases that came under my own cognizance, the patients suffered from thirst, but drinking, especially cold water, was fatal almost immediately. I have seen affected cattle go and slake their thirst at a brook, return to the bank and drop down dead." Alluding to the statement of some observers that the cattle neither exhibited thirst nor hunger, he adds: "It is said the banks of rivers and streams (in Texas) are often lined with the carcasses of cattle dying after drinking." The first symptom is an increase of internal temperature, it rising from 95° to 103°, or to 106°. The animals have a high fever, the milk of cows dries up, and the disease runs its course within three or four days usually. The localities most seriously affected by the disease have been along the railroad lines, where the Texas cattle have been taken for pasturage, and the eastern cattle yards, where the cattle have been sent for slaughter. Boards of Health and other officers have taken prompt and judicious measures to prevent the spread of the disease and the use of the meat.

What should be done? The question affects every one! The Chicago Packers' Association took the first right step, (seconded as we hear by Gen. Capron, Commissioner of Agriculture) in employing Prof. Gangee, who was at the time at Chicago, to go with medical and other gentlemen to thoroughly investigate the disease and its causes. The report of this Committee has not been made public up to the time of our going to press, though sundry conflicting statements, purporting to come from Prof. G., are reported by the newspapers. Judging from the light we have we should certainly say an absolute prohibition of the traffic in Texan and Cherokee beeves should be enforced except during the season of occasional severe frosts. The dates might be set as between November 1st and March 15th, or the date of the commencement of the driving or shipping of the cattle might be announced by the Governor of Missouri, the Commissioner of Agriculture of the United States, or some other suitable person.

Asiatic Fowls—Cochins.

We obtain from Asia, and especially from Eastern and Southern Asia, a number of striking and useful varieties of fowls. Among these are the Malays, Brahmas, and Cochins, all notable for their great size. The first named have been long known, but are now quite rare in this country, no doubt on account of the superiority of the other breeds. They are a gaunt, leggy fowl, of a somewhat game-cock look, but coarse; not so courageous in battle, but vindictive and cruel towards a weaker foe. The Brahmas or Brahina Pootras and Cochins resemble each other in general characteristics very closely, yet in some respects their habits are so different that it can hardly be doubted that they are regarded as distinct breeds from no mere fancy of the poultry breeders, but from inherent differences which careful breeding should preserve. We have from time to time received from China fowls very similar to these, which have borne several names now pretty much dropped from the roll. We hear no more of Shanghaes, little of Chittagongs; yet these were favorite breeds but a few years ago. The reason of this is that at the ports whence we received our China fowls, there was very little care taken to keep the breeds separate, and communication with the interior was difficult; hence Shanghaes with feathered legs and with clean ones, white, buff, gray, and brown, and marked by other differences, found their way to the breeding yards of England and America. After sufficient time had elapsed for the careful study of the breeds, their habits, and uses, they have been, by common consent, classified as Cochins and Brahmas, while the clean legged varieties of these breeds have been dropped as probably mongrels and unworthy of cultivation.

The Cochins are of various colors, while in form and plumage otherwise they are very similar. We give engravings taken from excellent photographs of three buff Cochins fowls from the yard of a young amateur, Mr. G. H. Leavitt, of Flushing, L. I. These birds are remarkable for their size, and though their form may be somewhat criticised by those who know the breed only in their own yards, or through Mr. Harrison Weir's beautiful and natural portraits of famous birds, belonging to noted English breeders, (in which we must believe he allowed his facile pencil to represent the birds a little nearer to what he wished to see them than they actually were), yet, considering their weight, it is remarkably fine.

The cock, photographed at 9 months old, weighed at a year old, 14 pounds; the hen on the left is an old fowl, and weighs 12½ pounds, and the other is, or was when photographed, 9 months old, and when a year old weighed 11



Fig. 1.—BUFF COCHIN COCK.—FROM A PHOTOGRAPH.

pounds. We find among the sub-breeds of Cochins, those of a nearly pure white color, all shades of cream, buff, lemon, partridge colored, brown, and even black, or very nearly black. The external characteristics of the Cochins are large-sized bodies, profusely feathered with soft,

legs, feathered to the end of the middle and outer toes; full neck hackle, and saddle hackle, and very small tails, which are nearly concealed in the fluff and hackle feathers. The hens have delicate combs, mild eyes, smaller legs, shorter thighs than the cocks, and characteristic plumage. The color is various, the tail being generally dark, and sometimes black in the buff, lemon, cinnamon, and partridge varieties. The Cochins are a very domestic breed, seldom wandering far from their yard, even if free range be allowed them. They differ in this respect from the Brahmas, which wander far, are early risers, and late in going to roost, while the Cochins are constitutionally lazy birds. They are hardy, mature early, are excellent winter layers, and crossed with Dorkings, Crevecoeurs, or games, make most delicious and early chickens. Broilers sell well in green pea time, but the fowls are not superior for the table, as their flesh is not so delicate as our common dunghills, or as the various crosses with the Cochins named above.

Arrange to Sow More Clover.

The value of red clover as a renovator of the soil is not generally appreciated. It makes excellent hay, and when consumed makes a manure very rich in nitrogen. A ton of good clover hay contains about 50 lbs. of nitrogen, probably not more than one-tenth of which is lost in passing through animals. It is worth as manure three or four times as much as that which we commonly cart from the yard in the spring. The crop is of very great value for pasture or to turn in as a green crop. The usage of good farmers differs somewhat in the treatment of clover. Some turn in the crop when full grown in June. Others pasture it the first season, and turn in what is left for wheat. Others

let it stand without pasturing, and turn it under for wheat. Others take off two crops, and turn it under the second season. The most intelligent farmers are now favoring the practice of cutting and pasturing through one season, believing that the soil improves more by the growth of the roots. It is a very strong-rooted plant and penetrates the soil to a great depth. The mechanical condition of the soil is very much improved by the decay of these long tap-roots. However used, it cannot fail to bene-



Fig. 2.—PAIR OF BUFF COCHIN HENS.—FROM A PHOTOGRAPH.

fluffy plumage; good-sized heads, with medium-sized, single combs, large wattles and ear lobes, clear, bright eyes, and strong, curved, tapering beaks; breasts broad and full; long, strong thighs, set wide apart, with short, thick, yellow

fit the soil if the manure that is made from the plant is carefully saved and returned to the fields where it grew. Clover ought to have a place in every rotation. The farmers of the interior and of the South have the means in this

plant of restoring the fertility of their wheat fields, and securing as large crops as the virgin soil yielded. Arrange to sow more clover.

Walks and Talks on the Farm—No. 57.

One of our most extensive stock dealers offers to furnish me 500 good Merino sheep to fatten this coming winter at \$1 a head. He thinks sheep will be lower this fall than ever before known, and that it will be a good time to buy good three-year-old wethers to fatten. "You will double your money before next March." No doubt this is so. But I would a great deal rather double the money on a lot of \$5 sheep than on a lot costing but \$1 a head. In the one case you get \$5 for the feed, and in the other only \$1. The one will pay very well, and the other will not pay at all. And yet you "double your money" in both cases.

Last winter Mr. Surian Winne, of Albany County, fattened 901 sheep, and sold them in the spring for \$12,049.15 net, an average of \$13.37 per head. Mr. W. made some very interesting experiments to ascertain which are the most profitable sheep to fatten, Leicesters or Merinos. He selected 60 Canada Leicesters and 61 Merinos, and placed them in two separate lots, giving to each precisely the same food and general treatment. The experiment continued from February 10th to March 28th, or 46 days.

February 10th, the 60 Leicesters weighed 8,870 pounds.
March 28th, the 60 Leicesters weighed 9,873 pounds.
Gain in 46 days, 1,008 pounds.
Total cost of feed (hay, grain, oil-meal, roots, &c.), for the 46 days, \$174.43.

February 10th, the 61 Merinos weighed 6,909 pounds.
March 28th, the 61 Merinos weighed 7,389 pounds.
Gain in 46 days, 480 pounds.
Total cost of food as above, \$144.78.

Both lots were sold March 31st. The Leicesters brought 10 $\frac{1}{2}$ cents per pound, live weight, and the Merinos 10 $\frac{1}{4}$ cents. These are the facts as published in the Albany Cultivator, the editor of which says:

"A calculation in simple proportion will show that if the coarse wools gained 1,003 pounds at a cost of \$174.43 for feed, the gain of the fine wools at the same ratio, upon an expense of \$144.78, should have been 836 pounds, whereas it was only 480 pounds, or a little more than one-half a proportionate amount as compared with cost. Compared with live weight Feb. 10th, the coarse wools gained 11 $\frac{1}{2}$ per cent in the 46 days, the fine wools not quite 7 per cent."

The results would have been more satisfactory had the experiment commenced earlier. Six and a half weeks is too short a period.

The average weight of the Leicesters February 10th was 147 $\frac{1}{2}$ pounds, and March 28th 164 $\frac{1}{2}$ pounds, showing a gain of 16 $\frac{1}{2}$ pounds, or a little over 2 $\frac{1}{2}$ pounds per week. The average weight of the Merinos February 10th was 113 $\frac{1}{2}$ pounds, and March 28th 121 pounds, showing a gain of 7 $\frac{1}{2}$ pounds each, or 1 $\frac{1}{4}$ pounds per week.

In proportion to live weight the two lots consumed very nearly the same amount of food, as judged by its money value. The actual weight of the food consumed is not given. Thus the average weight of the Leicesters during the experiment was 9,371 pounds, and they consumed \$174.43 worth of food, or \$1.86 per 100 pounds. The average weight of the Merinos was 7,149 pounds, and they consumed \$144.78 worth of food, or \$2.02 per 100 pounds. It will thus be seen that the Merinos consumed a little more food in proportion to live weight than the Leicesters, but the difference is not very striking. The food of the Leicesters cost 44 cents per week per head, that of the Merinos 36 cents.

Each pound of increase cost with the Leicesters 17 $\frac{1}{2}$ cents, and with the Merinos 29 cents.

It is very evident that if we depend for our profit merely on the gain in weight, fattening sheep in winter will not pay. In England lean or store sheep sold for the purpose of fattening usually command as much per pound as they sell for per pound when fat, and from the fact that the business is carried on to an immense extent we must conclude that it is, directly or indirectly, profitable. The turnip crop gives the English farmers a large supply of green food in winter at a comparatively cheap rate, and it is owing to this crop and to the rich manure obtained from its consumption, in connection with oil-cake and clover hay, that they sell choice mutton at cheaper rates than we can.

Fattening sheep in winter has usually been quite profitable in this country. This is owing to the fact that comparatively few farmers had sufficient courage to feed enough grain or oil-cake to make their sheep really fat, and those who selected the right kind of sheep and fed them liberally monopolized the business. How long this state of things will continue remains to be seen.

John Johnston has been a very successful feeder of Merino sheep. He buys three and four-year-old wethers in the fall, feeds them liberally all winter, and sells them about the 1st of March, getting good pay for the food, a large pile of rich manure, and often a considerable sum of money for his trouble. But, of course, if every pound of Merino mutton produced during the winter cost 29 cents, he must buy his sheep at a cheap rate in the fall and sell them high in the spring. He contends that he can make more money as things are in fattening Merinos than in fattening Leicesters. He is probably right; but what he makes somebody else loses. It is evident that the Leicesters will produce more mutton for the food consumed than the Merinos.

The profit of fattening sheep in winter depends much more on getting an additional cent or two per pound in the spring than most farmers realize. If Mr. Winne's sheep had sold for 8 cents per pound, instead of over ten cents, he must have bought them at very low rates to have made any money by the transaction. Thus if his Leicesters weighed 100 pounds in the fall, and he fed them for 20 weeks, they would then weigh 150 pounds, which, at 8 cents a pound, would bring \$12. The food costs 44 cents a week, or \$8.80; so that, to get his money back, he must buy Leicester sheep weighing 100 pounds for \$3.20, or less than 3 $\frac{1}{4}$ cents per pound, and then depend wholly on the manure for his profit. With the Merinos, if they weighed 80 pounds in the fall, and increased 1 $\frac{1}{4}$ pounds per week for 30 weeks, they would then weigh 105 pounds, which, at 8 cents per pound, would bring \$8.40. The food at 36 cents per week would cost \$7.20. So that the sheep must be bought for \$1.20 per head, or 1 $\frac{1}{4}$ cents per pound. If the sheep sold for only 7 cents per pound in the spring we should have to buy a good 80-pound Merino wether in the fall for 15 cents, in order to come out even. If the sheep sold for 6 cents per pound in the spring, or \$6.30 each, and the food cost, as it did in Mr. Winne's experiments, \$7.20, those who are desirous of getting rid of their sheep must give some enterprising feeder 90 cents apiece to take them off their hands!—To go into the business of fattening sheep in the winter, therefore, because sheep are now cheap, and because "you can double your money," would be all very well if it did not cost anything to feed them.

I told you that our cows were very thin this spring when turned out to grass, owing to the fact that we had been feeding corn-fodder up to about the 1st of March, and milking them until within a few weeks of calving. We fed them a little corn meal mixed with water, but they did not eat it very well, and we gave it up after a few days. Contrary to my expectations our cows have never before done so well.

I have a 10-acre field, that, when I bought the farm, was occupied with nursery trees, and had been for four years. After the trees had been taken off I sowed it to peas, and top-dressed it with three or four hundred pounds of superphosphate and other artificial manure per acre. The peas were the largest crop I ever saw grow. We had some forty-four large two-horse loads from the ten acres. The land was full of thistles, but the rank growth of peas smothered them out. After the peas were off we plowed the land twice and drilled in wheat, top-dressing it with Lawes' wheat manure that I got from England. The wheat was a fair crop, say twenty-five bushels per acre. It was seeded down with clover alone, and after the wheat was off, such a growth of clover that fall I have rarely seen. I pastured it down quite bare in October and November, which is perhaps not a good practice, but I was short of feed. At any rate, the next spring the clover started early and produced an immense crop of hay. It was then allowed to grow up, and was cut for seed. This spring the clover grew almost as rigorously as before. We have kept on it, so far, eleven head of cattle, eight sheep, a dozen or more pigs, and for several weeks eight horses. The pasture, although we are having a very severe drouth, is still green and abundant. The Deacon was speaking about it this morning. He thinks it must be "that stuff you put on to it," and he is undoubtedly right, though I have no doubt that the fact of the land having been cultivated for five years with young apple trees has something to do with it. Elwanger and Barry tell me that a dozen years ago it was almost impossible to induce a farmer to rent land for nursery purposes, but now they are offered it every day. Farmers find that when land has been kept in small trees and receives good cultivation for four or five years it afterwards produces splendid crops. It is another illustration of the fact that "tillage is manure."

Our cows are nothing to brag about, and have nothing but this heavily stocked pasture, and yet we get from seven cows—one of which is farrow—about forty-five pounds of butter a week. This week, though the weather is very hot and pastures generally are drying up, we made 43 pounds. This, of course, is nothing remarkable, but still for a run-down farm it is encouraging.

Nobody needs a little encouragement more than the man who undertakes to renovate a run-down farm, especially if he is known "to write for the papers?" and if, as I made up my mind to do, he tells of his failures as well as his successes, he may be excused if his mind dwells on the first indications of any decided improvement that he may see on the farm. In this light I think no one will blame me for saying that my crops this year are far better than ever before. We have drawn in about one hundred and forty loads of capital hay, and have still twenty acres of timothy to cut. This is on the old "stump lot" that we cleared up last fall, and plowed for the first time. I intended to have cut it before, but wheat harvest came on so rapidly and men demanded such exorbitant wages that I concluded to let it remain till after harvest and cut it for seed. My operations in

clearing up this land have certainly been successful. We did not plow it till August. Ten acres of the drier portions of the field we sowed to wheat on the tough old sod just turned over. This is the best wheat I have, and the Deacon says: "Don't you be talking about that wheat crop, or you will lead thousands astray; we all thought you would not get any wheat, and if the season had not been so favorable for this kind of low land it would have all winter-killed or *ruined*." Now the truth is, the good crop is not so much owing to the favorable season as to a deep open ditch that I cut through it. On the lower portions we sowed timothy alone. The weather was so dry last fall that much of the seed did not germinate, and it did not start till after the rains in May. And yet I think a good deal of it will cut at least two tons of pure timothy to the acre, and the Deacon says if I harrow it this fall, sow a little more seed, and get out all the pieces of roots that are brought to the surface, so that next year we can cut it with the mowing machine, it will pay better than the best wheat land on the farm. This year's crop will much more than pay for all the labor I spent on it.

As long as labor is so uncertain I think I shall plant but little corn. I never thought that there was much profit in the crop itself in this section. The main object in raising it is to clear the land; but I am not sure if it is not better to summer fallow. Farmers complain of the scarcity of help and of the unskillfulness and idleness of that which they do obtain, together with the high wages demanded. On the other hand, farm men who have families complain of the high prices of everything which they have to buy, and assert (and, I believe, truly,) that they have to be far more economical than before the war. This labor question demands the earnest and thoughtful consideration of every intelligent farmer. That there is something wrong in our present system is obvious. Men receive higher wages for the work done than in any other country in the world, and yet there are, in the older settled sections, industrious, able-bodied, and skillful men who live either in houses of their own or rent them, who are as poor and enjoy no more of the comforts of life than the English laborer who works for half a dollar a day and boards himself. Why is this? It is not the currency; it is not the climate, though this may have something to do with it; it is not owing to any difference in the men. Is it not owing to the want of regular employment?

During the first part of the season I paid my extra hands ten shillings a day, and they boarded themselves. As the season advanced I paid twelve shillings, and promised to do so till the 1st of December. Haying came on before farmers were through hoeing, and harvest long before they were through haying. My men as they came to work in the morning were met by farmers who do not employ any extra hands for more than two or three weeks in the year, with the question: "How much a day does Harris pay you now?" "Twelve shillings." "If you will come and help me to-day I will give you twenty shillings and board." Some of them have strength enough and sense enough and honor enough to resist the temptation, but it makes them uneasy, and those who come say: "John has gone to help Snooks to-day, and gets twenty shillings, and I think you ought to pay me more than twelve shillings." Now, of course no man can afford to pay such wages for any length of time. A farmer who gets into a tight place can afford to pay for a week ten or

fifteen dollars extra rather than have his hay spoil or his wheat shell out, and he can hardly be expected, perhaps, to take into consideration the effect that such extravagant wages have on men who are engaged for the season at reasonable rates. That it has a bad effect we all know. During the very busiest part of the year, when every hour counts, and when, if ever, men should try to do two days work in one, they are the most independent, most dissatisfied, and most inclined to shirk. It is not that there is a scarcity of men. Every month brings thousands of stalwart Germans to our shores, and the cities are crowded with people out of employment. There are men enough to do all the work, provided their labor could be economized and properly distributed through the season. These men who get such high wages for a few days do not like to settle down to steady work at reasonable rates. The consequence is, they are idle half the time, while many things that could be done profitably with labor at ten shillings a day are left undone because the men refuse to work for less than twelve shillings or two dollars. Occasionally they get jobs at such rates of payment, and are thus able to eke out a scanty and uncertain livelihood.

Education for Farming.

Summer work has occupied the minds and hands of the young men and boys of the country, and by this time they begin to see their way through, and many are thinking what to do for the winter. The crops are to be harvested, and when this is done, the work will be such that fewer hands will do it, and the boys can be spared to go to a trade or to school. There is a great demand for the labor of good mechanics of almost every trade, many of whom are now getting very high wages. The country is growing rapidly, and though, as a rule, American journeymen are by no means thoroughly accomplished, like the mechanics of Europe, yet there is work enough for them, and they rise rapidly if industrious, sober, and intelligent. This makes the trades very attractive to young farmers, and the mechanic arts will always draw their recruits largely from the farms. The farm, however, offers greater inducements to really intelligent labor than either the trades or the mercantile professions, and young farmers should plan how to best spend the winter for their improvement in their profession.

The farmer without an education for his calling remains a sort of drudge wherever he is, and he stands no higher in society than a mere hand-worker ought to. Properly educated for his business he elevates his profession and himself exactly in proportion to his intelligence and general culture. Facilities for agricultural education are greatly increasing over the whole country, and it would be well for farmer-boys to see if they cannot in some way take advantage of them, even if they can do no more than attend a single course of lectures. The advantages to be gained would be some information which could hardly be acquired in any other way, a knowledge of where to obtain information from books and from other sources, and finally, how to make knowledge available. The Agricultural Colleges of Michigan and Massachusetts, the Scientific Schools of New Haven, Rutgers and Dartmouth Colleges, offer such facilities. The Cornell University, with its unrivaled advantages, the University of Kentucky, and several other institutions, open their doors to those who would base their agricultural

practice upon a broader foundation than that of their own and their fathers' experience.

Our successful commercial men, merchants, manufacturers, bankers, brokers, shippers, etc., as soon as they acquire wealth which they do not need in business, immediately buy country seats, or farms, which they have worked under their direction, or upon shares, either for the sake of drawing articles of daily consumption fresh from the fountain of natural supply, or to be used as summer retreats from din and dust, or for the profit they hope to gain by the rise in value of the land. Thus there is and will be an increasing demand for intelligent young farm managers to superintend with profit to the owner these estates. Good salaries will be paid for educated brains, and this demand, as soon as it is felt upon the farm, will keep our agricultural colleges and lecture rooms full of attentive pupils, who choose farming as their trade.

Should Cows Have Food during the Night?

A young farmer asks: "Do you think that cows should be turned into a small enclosure when milked in the evening, and kept there without food or water until after milking in the morning?" We think not. At all events they should have access to water, and if they could have a good feed of green food, say corn fodder, they would give enough more butter to pay for all the cost twice over. In experiments made on the Royal Agricultural College farm, at Cirencester, the average composition of milk was ascertained during each month. The results for September and October were as follows:

		Water	Butter	Fat	Cream	Milk-sugar	Ash
Sept.	Morning.....	89.91	1.99	3.94	4.48	0.64	
	Evening.....	90.70	1.79	3.81	4.04	0.66	
Oct.	Morning.....	87.60	3.90	3.87	4.84	0.79	
	Evening.....	90.30	2.99	3.37	3.76	0.58	

Dr. Væleker, in commenting on these remarkable results, states that the cows in September were out in "a pasture, poor and overstocked, so that the daily growth of grass furnished hardly food enough to meet the daily waste to which the animal frame is subject, and was not calculated to meet an extra demand of materials for the formation of curd and butter." In October, "on account of the deficiency of the herbage, the cows were in the evening driven into the stall and there supplied with hay, roots, and meal. The milk became better at once; for the morning's milk then contained 12½ per cent of solid matter, and in this nearly 4 per cent of butter. [The Dr. does not mean exactly what he says. It was not the solid matter that contains 4 per cent of butter, but the milk itself. The solid matter contains over 31 per cent of butter.] The concentrated food which the cows were fed at evening was clearly made into good, rich milk during the night."

In regard to whether it is best to allow the cows to run in the pasture during the night, or to shut them in the barn-yard, there is a difference of opinion. But we apprehend the present custom arose from the greater convenience of having the cows in the yard ready to milk in the morning, instead of having to go through the wet grass, or sometimes into the woods, in search of them. We think there can be little doubt that they would do better in a good pasture during the night than in a pen. A better plan, however, is to feed them in the yard.

This is a standing argument for feeding low—say all the straw and hay they will eat, with a few nubbins of corn, five or six weeks before

they come in. There can be little doubt that, as a general rule, cows are not fed high enough during winter to afford the best results during summer. A cow kept in a comfortable and well-ventilated stable, with abundance of nutritious food, will be healthier and better able to stand the strain on her constitution at calving, than if kept on a low diet; and there can be little doubt that, with a cow of the right sort, all the fat that is accumulated while she is dry will find its way to the pail during the summer in the form of butter. In the dairy districts wintering a cow is expensive, even on the poorest description of food, and it is a short-sighted policy to stint her, as we thus lose the whole benefit of her existence during several months. It is just as important to feed her well while she is dry as while she is giving milk. Of course the matter may be overdone, especially with cows not adapted to high feeding, but as a general rule, there is very little danger in this direction.

will soon be followed by great interest in rotation of crops. This, indeed, is already becoming the theme of thought and discussion among wide-awake men. To get the best crops we must have manure. The crops must be converted into beef or money, and manure. To get the most manure and the best and cheapest beef, we must have barns; while to make the best use of the manure and secure clean culture, we must adopt a rotation of crops. Our Western friends are, perhaps, too apt to measure the merits of a barn by its size, its substantial framing, and good finish. The criterion of excellence should be convenience and adaptation to its uses.

Mr. Wm. B. Collier, of St. Louis, has lately erected a fine barn on his estate, in New Mexico, Adrian Co., Mo., and as it is regarded by well-informed people as the best barn in the State, he sends us a photograph and ground plan. The plan is a modification of that of the barn of Rufus J. Lackland, St. Louis Co. It was occupied January 1st of the current year, and with a large

corn crib 35 feet square, not seen in the engraving, cost \$9,000. The building is 84 ft. square, and nearly 50 feet in extreme height, not including the cellar; it fronts the south. There are 84 stalls, arranged as in the ground plan, fig. 2, there being two rows of horse stalls on one side and three rows of cattle stalls on the other. The proportions of the interior are as liberal of space as those of the barn itself. The central drive-way or barn-floor is 16 feet wide. The carriage

and wagon-rooms on each side the floor are 20 feet square each. Two large loose boxes are for the accommodation of the stallions "St. Louis" and "Pilot Temple"; and from the sketch sent we judge that the various passageways between the rows of stalls, and at the rear of them, must be more than 4 feet wide, while

we make out the horse stalls to be nearly 6 feet, and the stalls for two cows to be nearly 8 feet in width. The two spaces enclosed between dotted lines on the barn-floor indicate the position of the hoistways for hay and grain, under the skylights. The spaces at either end outside these hoisting spaces are floored over above the great doors, and are to be finished off as granaries for keeping the stock of oats, meal, etc., required for the stock. On each side of the barn is a rain-water cistern, 12 feet 9 inches in diameter, and 25 feet deep; these are connected by a pipe, passing underground across the front of the barn. There are seven windows on each side, and six besides the five sliding doors, in each gable. These, with the three great ventilators, afford unusual provision for pure air. The cattle are, doubtless, as we judge from the arrangement of this plan, fed from the floor above. The passage between the rows of horse stalls is for feeding.

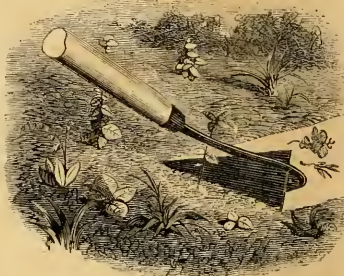
The building stands upon 54 stone pillars, and has a tight board floor, any part of which may be easily renewed, as occasion may require.

Foul Water in Wells.

Some wells furnish periodically water unpleasant to the taste, and doubtless unwholesome. The bad taste usually comes out in the summer at low stages of water, and disappears with the winter rains, when the wells are full. This occurs when the temperature of the water is raised sufficiently to allow the moderately rapid decomposition of organic substances which might otherwise remain without giving any hint of their presence. These substances may be derived from several sources; the most usual is from leaves and small animals falling into the well. In examining one of these tainted wells recently, we found that a lead pipe had been put into the well leading very near the sink drain, and the filth of the sink followed the outside of the pipe into the well. Sometimes other causes of pollution are in close proximity. We cannot be too careful in securing pure water for family use at all seasons of the year. Quite often the secret of disease is found in the well. Temporary relief may be found in the use of charcoal, but this does not relieve the heads of the family from the responsibility of ferreting out and stopping the cause. Throw a peck or half bushel of good charcoal on the fire; let it get partially ignited through-out; then take it out, crack the large lumps, and put it immediately into a wet gunny bag or any wet sack of coarse, open stuff. Put into the bag, also, a stone weighing 10 pounds or more, and, attaching a cord, lower it to the bottom of the well. Churn it up and down a few times, and after an hour, repeat the "churning," and this time fasten the cord so that the bag will hang near the surface of the water. Repeating the operation in a few hours the water will probably be sweet and healthy for several days.

The Lance-head Hoe.

A few weeks since our good friend James P. Swain, of Westchester Co., brought into the office three hoes like the one engraved, and the very same day we received a letter from "P." of Gloucester Co., N. J., which we give in part below. The hoes brought in by Mr. Swain seem to have been made exactly after the pattern described by "P." so much so that we in-



LANCE-HEAD HOE.

quired into the matter and found the gentlemen to be entire strangers to each other, and that Mr. Swain had originally made his hoe in his father's blacksmith shop some 50 years ago. These hoes are quite distinct from the common bayonet hoe, being 4½ inches long by 2½ in

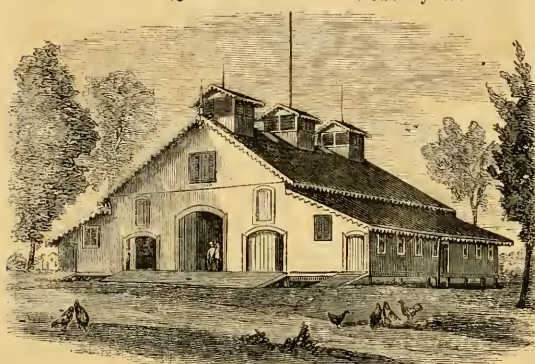


Fig. 1.—MISSOURI BARN.

Barn Building at the West.

The barns of the West have hitherto not been models either of architectural style or practical utility, which could be held up for imitation. Of late, however, we know of a great awakening taking place on the subject of barns, and

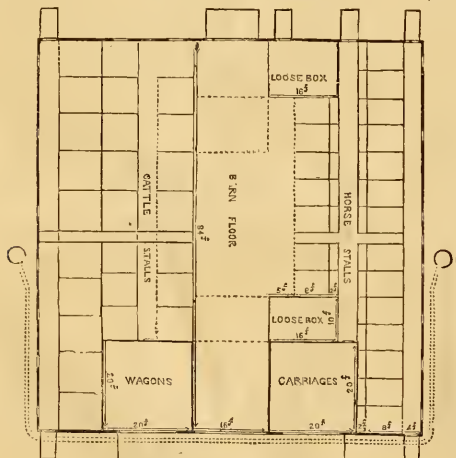


Fig. 2.—PLAN OF BARN.

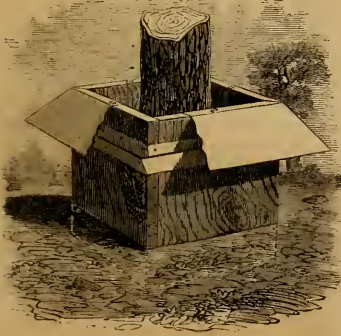
of manure,—two subjects than which none more important can be discussed, and which

plan, fed from the floor above. The passage between the rows of horse stalls is for feeding.

width, made of good steel, very light, very sharp, and balanced on a line with the handle. We never before employed so handy a tool for surface working of the soil where it is not very stony. It picks out weeds close to, or in the carrot row almost, and often quite as well as a pair of fingers; it sweeps through the crust of the soil, cutting every weed and letting it stay where it stood. Held at a different angle it turns off quite a furrow, which may be directed against the row or up to a "hill." It works around a hill of corn or beans in an affectionate sort of way, the point entering to nick out a weed or two, and the blade whisks about, loosening the soil and cutting off the weeds, and though out of sight is in no danger of doing any injury—the "goose-neck" being turned toward the plant. The handle is very light, and might be best made of clear straight-grained pine, for it is, or should be, subjected to no hard blows. "P." writes as follows: "I have seen nothing that suits me better for stirring the ground between plants, loosening hard soil, and even for chopping up deep-rooted weeds and tufts of grass, and scraping the top soil, than the spear or lance shaped hoe. A few years ago I went to a blacksmith and described to him what I wanted. He took a worn-out, flat, shoeing rasp, and broke it in two in the middle, and from one-half of it soon forged me a very complete tool, sharp and thin at the edges and point. I ground it up quite sharp on the side edges, leaving the back or middle thick, the inside flat, about in the shape of a spear head cut or split in two flatwise. After a use of three summers it is but very little worn, and seems to be the favorite tool of the garden. For replanting corn and truck seeds generally, it is splendid. It cannot be excelled for ease of working and completeness, and by using the side, it is a fine affair for scraping the top of the ground and killing weeds just starting."

Remedy for Canker Worms.

We published last year, page 102, Ralph Robinson's method of destroying the female moth of the canker worm. That had the merit of cheap materials, but was expensive in the item of labor. In a recent conversation with John



PROTECTION AGAINST CANKER WORMS.

G. Barker, of Cambridge, Mass., he gave us the details of a plan, which he has applied to the orchard of which he has charge, for the last two years, with entire success. He is indebted for the idea to Elijah Luke, an amateur horticulturist, of Cambridgeport, Mass. To prevent the moths from ascending the tree, he incloses the trunk with a rough box, fig. 1, about 15 inches deep, of sufficient size to leave about 4 inches

between the inside of the box and the nearest points of the trunk. The box is set on a level, and the lower edge 3 inches in the ground. The space inside the box is packed with tanbark, to prevent the moths from ascending within. About 3 inches from the top of the box on the outside, he fastens a V-shaped trough made of zinc or some cheap metal, as shown in the illustration. A tinman is needed to solder the corners, and make the trough tight all round.

The trough must be on a water level. He then puts into the trough about one pint of crude Petroleum, which is very destructive to insects. This article is comparatively cheap, about 25 cents a gallon, and does not readily evaporate. Over the trough he fastens a zinc lid upon each side of the box, with a screw in the middle of the lid, which projects 3 inches beyond the trough. This protects the petroleum from the weather. It is fastened by a screw for convenience in removing to pour in the oil, or to remove insects, lest the trough be clogged. The boxes are put around the trees, and the troughs filled the last of September, and are kept there as long as danger threatens from this pest. The cost of the boxes and troughs is about two dollars per tree, and they are good for a great many years if well made. The saving in labor from the old method of tarring is very great. After the oil is put in, there is absolute security, with only a rare visit to the trees to see that the troughs are not filled with the moths. We are assured by Mr. Barker that his success has been complete in the midst of orchards that were made bare by this insect. He has raised apples enough in the last two years of dearth to more than pay for the expense of the boxes. In Vol. 24, page 366, Mr. David Lyman describes a device for preventing the ascent of the moths. It is a tin cylinder suspended around the trunk a few feet from the ground, by means of a short cotton bag, which is tied firmly to the tree. The lower edge of the tin is smeared with a mixture of castor oil and kerosene, which requires frequent renewing. This is a cheaper contrivance, but requires more labor in watching and attending to it.

A Durable Stone Fence.

The great objection to the old style stone fence, whether built single or double, was its want of durability. Unless the foundation was put below frost it was soon thrown out of line, and in a few years gaps were made in it every winter, and much labor was expended for repairs. It was, indeed, a better fence than one of rails, for the material never rotted, and it did not need resetting so frequently. It was always expensive, and would never have been so extensively built but for the convenient market it made for surface stones. The rock lifters, of which we have two, at least, mounted upon wheels, have introduced a new style of heavy wall that can be cheaply built, and will last forever. These machines will draw boulders deeply imbedded in the earth, weighing six or eight tons, and, with a single yoke of cattle or span of horses, will lay them in the bed of the

wall. The smaller boulders are put in their position without any straining or lifting, and a wall of five or six feet high, embracing three tiers of stone, as shown in the illustration, can be laid by the team and two men. The interstices have to be filled up with smaller stones, and the large stones sometimes need blocking to make them bear perfectly. The largest boulders are five or six feet across, and this is the width of the wall at the bottom, as usually

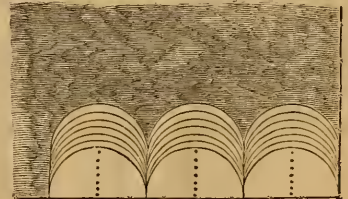


WALL OF HEAVY STONES.

made. The stones next in size make the second tier, and the smaller ones form the caps. A wall of this kind with a four-wheeled machine can be laid up for about \$2.50 a rod, including the digging of the stones. The most expeditious method is to lay the stones as fast as they are dug, as this saves the labor of hitching on to them and raising them a second time. If properly laid, no frost will ever disturb such a wall, and it will last until the boulders crumble. Thus very rough pastures are economically cleared and fenced, and turned into smooth, productive meadows. The stone pulling is a very thorough subsoiling, and the effect is visible for many years.

Tethering Cattle in Grazing.

The tethering of cattle to save grass, except upon the smallest scale in yards and orchards, has never been pursued in this country. Land is so cheap, and grass so abundant in summer, that no need of it has been felt. In the region of cheap lands there is, perhaps, nothing to be gained by a change of the present system of promiscuous pasturage. But in some of the older States, and especially in the vicinity of our large towns, where land is worth \$300 an acre, and upward, we think the system of tethering might be adopted with advantage. In the unrestrained grazing of fertile lands much of the



TETHERING DIAGRAM.

grass is destroyed for feed by trampling and by the droppings of the cattle. We have seen in the grazing districts rich meadows, that would make two or three tons of hay to the acre, devoted to fat cattle. They are all unequally

cropped, in many places badly matted with manure and with a rank growth of grass that the cattle do not relish. This, of course, fertilizes the soil for another year, but it is dear manuring. The great objection to soiling, which saves everything that the soil produces, is the large expense of cutting and carting. It is claimed for tethering, by those who have tried it in England, that it economizes feed almost as closely as soiling, while it saves much of the labor. The system pursued by Mr. Dumbrell, of Ditchling, near Brighton, England, is as follows: Stakes about 18 inches long are driven down into the ground at the outer edge of the field to be grazed, 32 feet apart. These stakes are furnished with chains 12 feet long, with a swivel in the middle, and each cow has a leather-headed halter four feet long, furnished with a T to fasten it to the chain. This gives each animal a sweep of 32 feet, and this is the breadth of the swath that she cuts across the field. She is not permitted to run at will over the fresh grass, for the stake is only moved about a foot at a time, and the cow grazes the new grass in a semicircle, as shown in the illustration, without being able to get her feet into it at all. The chains serve the double purpose of fastening the cows and spreading the manure. The herd graze regularly side by side, like a company of mowers, and are moved as often as may be necessary to give each one full feed. Thus all the grass is consumed, and the field is gone over about three times in a season. Mr. Dumbrell supplements the grazing after July by other green fodder,—tares, mangold leaves, turnips, and cabbage. He estimates that eight or ten acres of grass, with these additions in the latter part of the season, will supply 25 cows. The advantages of the system are great economy in feeding, uniformity of food, in quantity and quality, and economy in fertilizing. Land to be grazed in this way, of course, should be kept in the highest condition. The cost of attendance is the same whether it yield one ton of hay to the acre or six. The cows should be stabled at night, and the liquid manure saved and applied to the grass soon after it has been grazed. If fed exclusively by cows, the fall top-dressing should be from the sties or from artificial fertilizers, that the land may have the advantage of a variety of manures. The mode of tethering is a matter of considerable importance. The common mode, by fastening the rope or chain to the horns, head, or neck, is objectionable, as the tether is likely to get foul and prevent the animal from feeding, or inflict serious injury. If the tether be attached to the hind leg, using a broad leather band made for the purpose, the danger is very much diminished, and the restraint is soon quietly submitted to.

Barn-yards.

Manure ought to be prepared and kept under cover, but there are very few farms where this can be done without a greater immediate outlay than can possibly be made. The majority of us must therefore be content for a while to keep the manure and make it in the open yard. If not content with this state of things, nevertheless we must submit to it with all its losses and inconveniences, and do the best we can to avoid the evils. The problem is, to make the greatest amount of good manure with the stock we keep. The shape of the barn-yard, both in regard to its ground plan and its surface, is of the greatest importance. The yard must, of course, be adjacent to one or more stables, and by far

the most convenient arrangement is to have the barns or sheds used as stables on the whole of one side, and on parts of two others—for thus shelter is afforded to both stock and manure against prevailing winds, and the cattle have warm and sunny quarters, if the north, east, and west sides are thus closed.

The yard must not receive any water except that which rains directly into it, and for this we must make provision, that in flowing away, it cannot carry valuable manure with it. The water from the eaves of the surrounding buildings must be conducted off, and as evaporation under our summer sun is much in excess of the rainfall, it is well to have a portion of the water stored in cisterns, so that the manure heaps may never lack moisture should the natural sup-

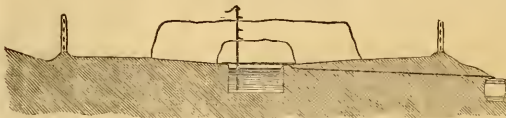


Fig. 1.—SECTION OF BARN-YARD.

ply fail. The annual rainfall in the United States varies considerably in different portions, the total in New England averaging about 41 inches; in New York, 36 inches; in the other Middle States, 40½; in Ohio, 40; in the other Interior States, 30 to 40; in the Southern States, 51; and, as a rule, the greater the rainfall the greater the evaporation. The great bulk of the rain, however, falls at a season when there is the least heat; hence there will inevitably be a great accumulation of water to be provided against during the winter and spring months.

An inch of rain often falls during what would be called a hard shower, lasting two or three hours. Protracted storms lasting several days give often no greater results, while it requires a very hard rain to give two to three inches of water. Nevertheless storms probably occur every year in which this (3 inches) is exceeded. If one inch of rain falls in a barn-yard 60 × 60 feet, it will be equivalent to about 72 blis. of 31 gallons each. A tank 8 × 10 feet, 4 feet high, will hold 77 blis.; consequently such a tank, if empty or nearly so, would collect and save all the rain of a pretty hard storm, falling in a 60 × 60 yard.

We give herewith a cross section of a barn-yard, figure 1. It exhibits the yard from fence to fence, so arranged that no water can run in or out. The space next the fence or buildings all around is level or nearly so. The interior space has a slope of about one foot in fifteen towards the middle, where there is an 8 × 10 tank laid in masonry, and covered with rails and the manure pile. A simple pump is set in the tank to distribute the manure water over the heap, of which outlines indicate the different sizes it may have. Into this tank flows the urine from the stables and all the water which falls into the yard, and is not absorbed. The overflow is provided for thus:—When the water reaches the top it flows out through the siphon, an enlarged view of which is given in figure 2. This takes the clear liquid below the floating straw, etc., and above the sediment of the bottom; and the water is rapidly drawn off until its level reaches that of the outer end of the pipe (B), when air enters at that point, and the flow ceases, until the water again rises to the top. This overflow may first run into a hogshcad and afford a convenient supply for watering the garden, and,

after this is full, flow off into a pit filled with muck or peat, through which it may soak into the ground leaving most of its valuable ingredients held fast by the peat for future use.

To carry out a plan of this kind considerable expense would be necessary. The barn-yard would have to be graded carefully and made impervious to water, or nearly so. Were the water to flow from the tank into a part of the yard below the level of the top of the tank, and filled with muck, sods, peat, weeds, etc., the evaporation during most of the year would prevent any loss from the flooding of the yard; but in winter it would probably overflow unless the soil were sufficiently porous to let the water through. No harm would come of this if a sufficient bed of muck were present.

When the tank is covered by a well-made compost heap, and this is kept constantly saturated with water, a very large quantity of water will evaporate, so that the farmer will be troubled

by a lack much oftener than by an excess of water in his yard. Even during the winter the heap being in a condition of constant fermentation is always warm, if not hot, and a vast deal of water will be thrown off. If properly managed and the manure be allowed to get neither too dry nor to be drowned with water, manure making will go on with astonishing rapidity.

A Field for our Agricultural Colleges.

Colleges to make farmers are not popular in this country. Those which have been started and endowed with government grants have met with a very limited success. With two or three exceptions they have not attracted pupils to any considerable extent, and appear to have made no impression upon the community of cultivators. The farmers seem not to have any appreciation of the privileges offered for their sons, and the professors have not hit upon the right methods of making scientific agriculture available for the masses. Farmers, as a rule, read and think more than they did twenty years ago, but the great majority are still in doubt whether the business pays, and generally educate their children for other callings. Most of the pupils in our agricultural schools, we are informed, are not the sons of farmers, and have no definite purpose to live by the cultivation of the soil. Yet there is great need of a class of young men in this country which these colleges ought to furnish. In Europe there is a constant demand for intelligent foremen to manage large landed estates, and it is the aim of the agricultural schools established there to meet this demand. There is a call for such men here, but no one knows where to find them. They were needed upon the large cotton plantations of the South before the war, and the want was imperfectly met. Though knowing nothing of the science of cultivation, the overseers did understand the rude methods of raising cotton which prevailed there, and the driving of slaves, and were well paid for it. They occupied an honorable position in the planter's family, sat at his table, and to a considerable extent, shared his social enjoyments. Though the introduction of free labor will make many small farmers, there will still be large plantations worked by superintendents or overseers in the South for a long time to come. And at the North, as capital increases, we look for

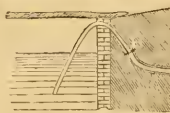


Fig. 2.—SIPHON.

the absorption of many of the small farms into large ones, and the cultivation of the land upon a grander scale. There is no doubt that, with suitable capital and skill, a 400-acre farm can be worked much more economically than a farm of fifty acres. It would require no more over-seeing and but little more capital for implements and buildings. The expenses for labor, fertilizers, and stock, would, of course, be much larger. There is an increasing love of rural pursuits in this country, and most men who are accumulating wealth in our cities are purposing to have, at no distant day, a country home. Many have already realized their dream, and are farming by proxy on a generous scale. We were surprised in our trip through the Middle and Western States last summer to find so many bankers, merchants, and professional men in cities, carrying on farms in the suburbs. This we found was generally done by a foreman, residing upon the farm with his family, and boarding the hands. Thousands of men of capital would be glad to do this if they could find suitable men to manage the business for them, and make it pay. They do not understand farming themselves, or have not the requisite time to attend to it. They would be glad to buy the farm and furnish the capital, and pay any man a handsome salary who would wisely direct labor and make the investments pay. Thousands of men properly trained would find profitable occupation as foremen on such places, if they could be had. Here, then, is a field for our agricultural colleges which they ought to enter immediately. And if it were known that they made a business of training practical men to fill places waiting for them, there would be in a short time as great a rush to the agricultural, as there now is to the "commercial" colleges. These institutions would begin to supply a want that is felt, and the reproach that farmers' sons are not found among their students would be taken away. It could not fail to have a very important influence upon the development of our agriculture, and all depending upon it.

Maure the Test of Good Farming.

We farm for profit as a rule, however many exceptions there may be. This profit which we all seek comes from the sale of the products of the land, or from that of animals fed upon them. This divides farming operations into two classes, and determines the nature of them, and the system pursued upon different farms, or upon different fields of the same farm. By far the greater number of farmers pursue a mixed system, deriving their income in part from crops sold, and in part from animal products. With such animal manure is a necessity, and the success of a farmer may be predicated upon the amount he makes and uses. A temporary exception to this rule is seen on some of the virgin lands of the West, and wherever apparently inexhaustible fertility of soil renders manure superfluous. Where a system of green manuring for wheat and Indian corn, with the addition of lime and plaster, and perhaps bone dust occasionally, is sufficient with good tillage to maintain fertility, farmers have an economical substitute for animal manures. This system may often be profitably applied to "out-fields," and occasionally to entire farms. Manure—barn-yard manure, or more properly, barn manure, for the yard is a poor place, at best, to make it—regarding both quantity and quality, must be considered the measure of good farming, and the test of success.

The Abattoirs at Communipaw

New York has an excellent code of sanitary laws, and many changes have been made which tend to sanitary reform. One of the most marked improvements in this respect is restricting the killing of animals to large slaughtering-houses or abattoirs, after the plan followed in European cities. In the engraving on the following page is represented one of the largest of these, the abattoir at Communipaw, N. J. It is located on the New Jersey Central Railroad, about two miles below Jersey City, and nearly three miles from Washington Market.

The building stands upon "made land," and is so arranged that boats find ready access to the side of the building at all times of tide, which greatly facilitates the prompt removal of all offal as soon as it is collected. The slaughtering-house, fig. 1, is 620 ft. long, by 60 ft. wide, with an ell 100 feet in length by 40 feet wide across the end. It is two stories high. Behind this building, and not shown in the engraving, is another building 40 ft. square, which is the sheep slaughtering-house. The first floor of the main building is devoted to the killing of cattle, of which we indicate only the general features. The immense floor of the cattle department is divided transversely into "beds," fourteen in number, each "bed" consisting of a pen for the cattle, a fat-cleaning room, a space of 15 ft. square for killing and dressing, and a drying space to hang the dressed carcasses. Over the portion devoted to killing and dressing the cattle there runs a long iron shaft, which is turned by steam, and is so arranged that all lifting is done quickly and easily. Three men and a boy to help, together with a man to clean the fat, are all that are required to work a "bed" to its full capacity. The drying space in this room is sufficient to hang up 1,900 bullocks at once.

The hog department, fig. 2, is on the second floor of the same building. The hogs, when they arrive by the cars, are unloaded and driven into large pens for their accommodation, in a building 800 ft. long by 100 ft. wide, fig. 1. This building is two stories high. The first or ground floor is used for storing hogs, the second for storing sheep. Each floor is divided into pens of convenient size, which are kept constantly supplied with fresh water; there are troughs and racks for feeding, and the animals are here given an opportunity to rest and eat until killing time. The alley-ways and gates of these pens are so arranged that the animals are lead, rather than driven from the pens, to the slaughtering-house. A view of the gangway leading to the second story is seen in fig. 1. One boy will easily drive 1,000 hogs or sheep.

Arrived at the slaughtering-house the animal finds itself in a pen similar to the one it has just left, and its fear and anxiety are greatly lessened. So rapidly is the act of killing performed that the cruelty which might otherwise occur is almost entirely done away with. In the bleeding department, fig. 2, three men and a boy are required. The hogs are seized by one of the hind legs, and by means of a short chain suspended to a hook, which has a wheel so arranged that it will run in a circular track stationed above the pen, fig. 2. As soon as the animal is secured it is passed around by means of this track to the "bleeder," who sticks it in the usual manner and passes it on to the boy, who stands ready to loosen the chain and let the hog down into the scalding tank as soon as dead. The scalding tank, fig. 2, is 12 ft. long by 5½ ft. wide, and requires two men as "scalders," to tend it.

As soon as a hog is ready, it is caused to float upon a sort of fork that works by means of a lever, and is thus rolled upon the scraping table. At this table, which is 20 ft. long by 5 ft. wide, stand 14 men, seven on each side. The first two take off the bristles and long, stiff hairs, which are saved in barrels. The animal is then passed to the next eight, four on each side, who are designated "scrapers"; they take off the bulk of the hair, and pass the hog along to the last four, who are called "cleaners"; these clean the head and feet, and more difficult parts. At the end of the table stands a man known as the "gambrel enterer;" he puts in the gambrel and again the hog is suspended on a circular railway, as before. It is at once passed along to the "gutters," who stand at the end of the fat-cleaning table. Their duty is to take out the intestines, liver, heart, and lungs, which is all done at once, and deposited by them on the fat-cleaning table, where six men are employed for that purpose. The hog is next passed to the washer, where it is thoroughly washed and scraped down with a large knife. The carcass is now ready for the drying-room.

At the head of the drying-room there is a one track railway, along which is run, on a wheel and hook like the rest, a two-pronged lever or fork. This fork is so placed as to lift the hog by the gambrel and transport him from the dressing-track to any one of the "slides" in the drying room. It is then placed in the slide, pushed back close to its fellow, and left to drain and cool, fig. 2. The hog slaughtering-house is divided into six compartments, similar to the one described, and the drying-room has hangings or slides for six thousand hogs at once. The fat as fast as it is cleaned is carted by means of box trucks to the rendering tanks, which are ten in number, and each of which has a capacity sufficient for the fat from one thousand hogs. The lungs, hearts, and livers, together with all the rough fat, are also put into rendering tanks, especially kept for that purpose, and the "lard" thus obtained is used for making oil. The steam arising from these immense tanks of boiling fat is made to pass through escape valves into a long coil of iron pipe, which is immersed in a large tank of running water. Here the contained steam is partly condensed. From this tank a pipe passes some three hundred feet out into the Bay, where the steam and gases escape under water. No disagreeable odor ever arises from the fat department.

The offal and blood as fast as accumulated are taken by box trucks to the barge-gangway, where a boat is at all times ready to receive the refuse matter. This offal is here thoroughly mixed with deodorizers, and removed every night to the Passaic River Guano Factories, where it is used for the purpose of manufacturing fertilizers. After the day's work is done at the abattoir the whole floor of the slaughtering house is flooded with water and thoroughly washed. The washings escape into the Bay by means of gutters and pipes, and are carried by the tide far out from land. This abattoir was erected at great expense, and for the first year, owing to a prejudice on the part of the butchers, was but little used. But since the Board of Health has been sustained by the courts in its decision, that no slaughtering should be done in the built up portions of New York, the business has increased, and it is now running nearly to its full capacity. The advantages of an abattoir of the kind here described are so great that no city or large town should allow slaughtering to be done in any other manner.

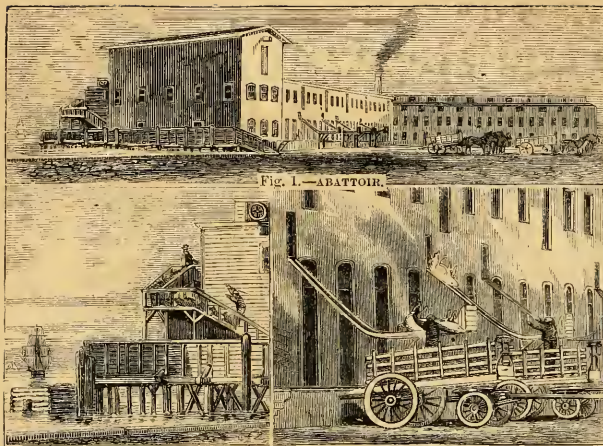


Fig. 1.—ABATTOIR.

DRIVING STAGES,

LOADING SHUTES



Fig. 2.—SHACKLING AND BLEEDING.

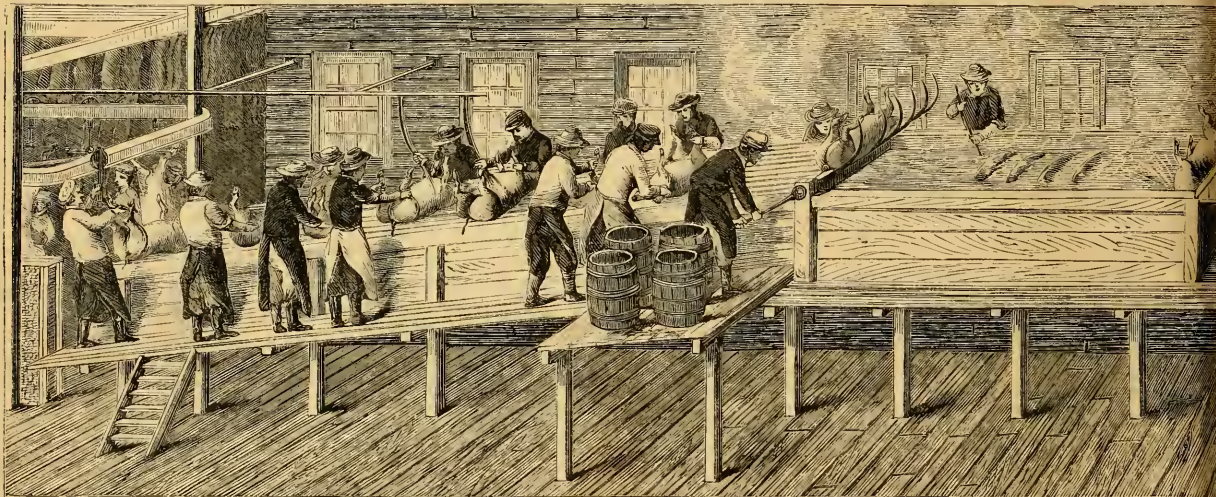


Fig. 2.—CANDREL CUTTER.

SCHAPERS.

SCALDING TANK.



Fig. 2.—FAT CLEANERS.

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CUTTERS.

COOLING SLIDES.

ABATTOIRS AT COMMUNIPAW, N. J.—DRAWN AND ENGRAVED FOR THE AMERICAN AGRICULTURIST.—(See Preceding Page.)

Fig. 1.—COCKSCOMB.—(*Celosia cristata*.)

The Amaranth Family.

The name Amaranth means undying, and has been applied by ancients and moderns in poetry without meaning any particular flower. The Amaranth Family of the botanist comprises many plants that would hardly find a place in poetry, or even in horticulture, for it includes several very unpleasant weeds. Yet for a certain kind of decoration, that of large grounds, the Amaranth family comes in play. We do not propose to go into a botanical description of these plants, for their characters need enlarged figures. Their general habit is known by several homely weeds, and that of the ornamental section by that common ornament of country door-yards, the Love-lies-bleeding. Of the cultivated members of the family, perhaps none is better known than the Cockscomb, (*Celosia cristata*), which has attained the dignity of a florist's flower. In the English shows the Cockscomb plays an important part, and wonderful accounts are given of the size of its singularly aggregated heads. Other *Celosias* are grown in which the flowers are not compacted as in the Cockscomb. The genus which gives the name to the family Amaranthus (the family is called *Amarantaceae*) comprises not only some troublesome weeds but some ornamental plants. *Amarantus speciosus* is a native of Nepaul, and forms dense, dark red, or purplish heads, piled up in the manner shown in the engraving. For large grounds it makes a fine show late in autumn. An old plant, which has been crowded out by others of less merit, is the "Joseph's Coat," (*Amarantus tricolor*), which in its foliage presents red, green, and yellow. In the demand for plants with brilliant foliage we do not know why this old friend has been overlooked, for there is nothing more showy. Perhaps being an annual, the florists, as it "will not cut," have not encouraged its cultivation. Among the Amaranths is the *Amarantus sanguineus*, which has a beautiful dark red foliage, and which well deserves a place among ornamental plants. All of the Amaranths are annuals, and their seeds

are to be had of the seedsmen. We mention them now as this is their season of bloom. The engravings we have given of *Celosia cristata*, *Amarantus speciosus*, and *A. tricolor*, are from drawings by the great French artist, Riecreux, and are as close representatives of the plants as can be, without the color. The plants of this natural family all bear the highest culture, flourishing best in deep, well-enriched soil, in the hot sun. After getting a good start they rapidly take and hold possession of the ground, disputing it with our most ravenous and hardy

weeds. Those therefore, the seeds of which survive the winter in the soil, are sometimes, like the genuine weeds of the family, a little troublesome, but are easily subdued. So tenacious

Fig. 2.—JOSEPH'S COAT.—(*Amarantus tricolor*.)

The Fault of Town Gardening.

In our travels about the country we notice one glaring fault in all the town and village flower gardens, and that we can express by no more appropriate name than "legginess." Everything is run up and drawn up to its utmost, with the exception of those plants which do better when rained up, and they are left to branch from below at will. Let us take as two examples, the Pelargonium (*Geranium*) and Heliotrope, which are among the most common plants set out for garden decoration. The *geraniums*, whether the rose geranium, grown for its fragrant leaves, or some of those prized for the brilliancy of their flowers, or the showiness of their variegated foliage, are often badly wintered plants, a tuft here and there of foliage set upon long, leggy branches, which never come into shapely plants. In plants like these, people seem to lack courage to pinch. There is nothing more tractable than a Pelargonium (*geranium*) of any kind. A house-grown plant may be made a dense bush by pinching, and a bit of a plant received from the green-house in spring may be left to grow into a "leggy," shapeless thing, or may be made, by proper pinching, to assume a pleasing form. Many people who grow plants and love them, lack the courage to do that which will be for the plants' good. A neighbor of ours has a lot of plants, all at sixes and sevens, and though we almost daily advise the use of the knife, he lacks the courage or the faith to apply it. The Heliotrope, when put out, often becomes a nuisance. Some branches start out near the base and grow a long distance before they show signs of flowering. Keep the Heliotrope pinched in as to its lower branches, growing it as a little shrub, and it will give an abundance of flowers all summer. By proper attention to the plant in the borders it may be kept in a good shape for potting for winter flowering, but as generally grown, it has a great number of long, weak branches at the base, and when it is potted in fall it is usually worthless. Timely care is the price of comely plants.



Fig. 3.—AMARANTUS SPECIOSUS.

of life are they that plants barely in blossom will, if cut up, in many cases ripen their seeds.



Fig. 19.

Fig. 20.

The Grape Vine—How It Grows and What to Do with It.—8th Article.

A notice of the more common systems of training the vine requires a mention of the Bow system, as it is one practised in a large number of vineyards, especially at the West. This method is a favorite one with the Germans, and though it is not to be advised where a better plan can be followed, it has the advantage of requiring but little outlay. The vines are trained to stakes, and being but little extended, may be planted closer than when some of the other systems are adopted. In starting the bow, a vine with two strong canes is first established in the manner heretofore described. The canes being strong enough to bear fruit, one of them is cut back to two or three buds, and the other is pruned longer, leaving eight to twelve, as in

end is brought around so as to make a more or less complete circle. The shoots from the buds on the short arms are trained upright to the stake, to form canes for another season; while the buds upon the bow will throw out fruit-bearing shoots, which are pinched at two or three leaves beyond the last bunch of fruit, as shown in figure 21, in which the leaves are omitted, to better show the arrangement of the vine. After the bow has fruited, it is cut entirely away at pruning. One of the upright canes is taken to replace it, while the other cane is pruned to a short arm of two or three buds, to supply uprights another year. The resemblance of the bow training to Guyot's system will be seen by a comparison of the figure given in July last with the one here shown. In both, we have a vine with one long and one short arm, the short one being intended to furnish a yearly supply of fruiting canes; and the main difference is that in the case of Guyot the long arm is kept horizontal, while in the other it is curved. The bow system is sometimes practised upon trellises, with the advantage that the vine is less liable to be beaten about by the winds. An illustration of this kind of training, as followed by Mr. Hunsman, is seen in figure 22, taken from his work upon the grape. The right-hand vine is represented as it appears in autumn. A

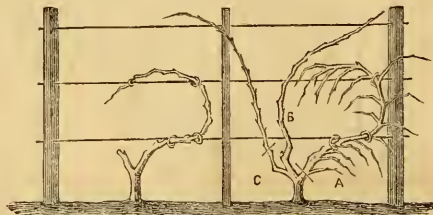


Fig. 22.

and C show where the cuts are made at pruning, and the cane B is shortened to a proper length to form the bow, as seen in the left-hand vine.

The *thinning of the fruit* upon the bunches should not be neglected if the habit of the grape demands it. Most of the varieties grown in the open air do not require it, but a few make the bunches so compact that it is impossible for the air to circulate freely among the berries. These must be thinned, sometimes repeatedly, to secure the best results. The thinning should be done with a pair of sharp pointed scissors made for the purpose. From one-fourth to one-half of the berries should be taken out from different parts of the bunch, so as to leave it of symmetrical shape, and give each berry room to fill.

Greens in Summer.

One accustomed to a good variety of vegetable food is struck with the paucity of this he meets in traveling about the country, not only at the tables of farmers but at the hotels in small towns. Potatoes, beets, onions, peas and beans in their season, make up a larger variety than is usually to be found. To add to these a frequent dish of greens would be an easy matter. The variety of beet known as Chard or Swiss Chard is most excellent for this purpose, and we wonder it is so little cultivated. It is a beet, the root of which is worthless, and it is grown only for the leaf. The leaf-stalk is broad and thick, and the leaf itself fleshy, tender, and succulent. There is a red and a white variety. The cultivation is the same as that of the common beet, but the plants should not stand nearer

than a foot apart. A rich, moist soil is best. In gathering, the outer leaves are pulled off, leaving the inner ones to develop and keep up a supply. The leaf and leaf-stalk may be cooked together, or the stalk may be separated, boiled, and dressed like asparagus, and the leaf cooked like spinach or other greens. A single trial will commend this to every lover of greens.

The Saving of Garden Seeds.

Many of the seeds are sufficiently matured this month, and the work of saving them should be begun before they burst their pods, and are lost. It is quite possible to save better seeds than we can buy, and the habit of carefulness in studying the habits of plants secured by growing our own seed will be worth much more to us than the value of the seeds. All our garden plants have been greatly improved from their originals, and none of them probably have reached the limits of their perfection. They can be made to mature earlier, and to produce more abundantly, as those who have made experiments have learned. If the first well-developed seeds of a plant be selected and sown for several years, the offspring will mature earlier, and eventually a new variety will be

secured with a fixed early habit. If we select the longest pods of a bean and plant the seed, we shall find the crop true to its parentage, and a more prolific sort will in time be established. It will take time and patience to secure desirable changes, but there is very great satisfaction in seeing our labors result in permanent improvements in our vegetables. It is a little more trouble to save the first mature cabbage, turnip, or beet seed, and to keep it by itself, but

it will pay if one can get a variety that will ripen a week earlier. It is particularly important to hasten the maturity of plants of tropical origin, melons, squashes, cucumbers, tomatoes, egg-plants, etc. Select seeds from the earliest perfect specimens and mark the result. Experimental plants should have the advantage of good soil, a southern exposure, and frequent cultivation. A plant with a predisposition to ripen its fruit early would not have a fair chance in a cold clay soil, or upon a northern or western exposure. If we mean to fix the habit of early maturity, all the circumstances must favor the growth of the plant. Aside from the influence which the saving of our own garden seeds will have upon the improvement of fruits and vegetables, the habit in itself is a good one. It is exceedingly convenient in the hurry of the spring gardening to know just where you can find every package of seed you want to plant, securely tied and labeled, with the name and date of gathering. For this purpose let the good housewife make up a few dozen paper bags, and have the packages stored away in the seed box as fast as they are secured.

LILIES.—A bed of hardy lilies is about as satisfactory as any thing one can have in the garden. The Japan Lilies are now quite common, and we have sent them far and wide as premiums. The grand Golden Banded Lily, which at first sold for \$40 a bulb, is now to be had for less than a dollar. Besides these there are varieties of *Lilium umbellatum*, all quite early; *L. excelsum*, with its crown of flowers so



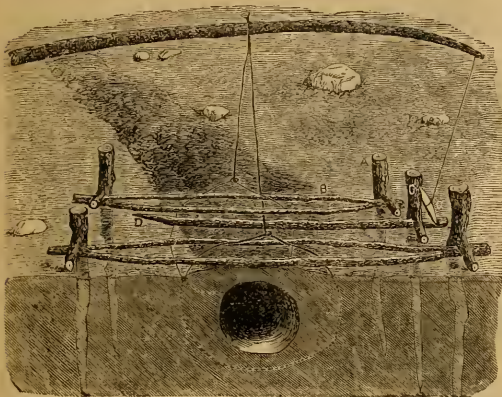
Fig. 21.

figure 19. The longer cane is made to form the bow, and is tied to a stake, as in figure 20, or the

delicately tinted that one is at loss for a name to describe the color; and the Long-flowered lily, *L. longiflorum*, low-growing, with long flowers of the purest white. All these are perfectly hardy. In making a collection do not forget our native species, so often entirely overlooked.

A Holland Mole Trap.

A short time ago we noticed in the grounds of a horticultural friend a remarkably rustic mole trap. The gentleman's gardener, "Pete," was formerly in the bulb gardens of Haarlem, and the contrivance in question was the same used there, and which adds essentially to the wages of the workmen on the bulb farms, as a bounty is paid for the destruction of moles. The trap is made of rough sticks, which can be cut from any kind of brush, a string, and a few feet of fine wire. The illustration will show the manner of setting the trap. The mole run is



HOLLAND MOLE TRAP.

trodden down to close it, and across it is placed the forked stick, *B*, about a foot long, which is held down by a hooked wooden peg (*A*), driven into the earth at each end. About two inches from this stick and parallel to it another one is similarly placed. Between the two is the trigger, (*D*), a stick placed between the two forks; one end of this has a notch cut in it, and passes under the crotch of a hooked peg. At the end of a spring-pole, only part of which is shown in the engraving, is fastened a string, to which is attached the little catch, *C*; both ends of this catch are wedge-shaped, and one end is placed in the notch in the trigger, while the other catches in a corresponding notch cut in the hooked peg. It will be seen that if the trigger is slightly lifted the catch will be loosened and the spring-pole fly up. Two pieces of wire, each with a loop in the lower end, are attached to the pole. These loops, which should be the size of the run, are so buried that the mole will pass through them. The earth is scooped out between the arms of the forked sticks, the loop placed in and covered with earth. If the mole comes in either direction, it springs the trap, and is caught and held fast by the wire loop. The trap is much less complicated than may seem from the description, and can be made and set in less time than it takes to write out a description of it, and of how it works.

HOGS IN THE ORCHARD.—At the July meeting of the Alton (Ill.) Horticultural Society, it was strongly advocated to put hogs in the or-

chard. "Mr. Caughlin said he turned about 25 hogs into his peach-orchard last year, when the fruit was dropping; they ate up all that dropped. This year his peaches are very fair. Mr. Brown said he considered hogs a very great advantage in the orchard; has one orchard that he could not fence for hogs, and the fruit in it is much more affected with insects than in the others where the hogs run. His hogs do well, and give him cheap pork. He intends to keep hogs in all his orchards. He recommended seeding orchards to clover."

Seeding Down Lawns in Autumn.

The autumn is in some respects the most favorable season for finishing a lawn. Lawn making really should take two seasons, one summer for grading, the autumn and spring following for planting, the following summer for tillage; during which it may well be occupied by some properly summer crop which will leave the ground bare in August or early in September. If the manuring be liberal and the soil good, early sweet corn will be found a very profitable crop near a market; corn sowed for green fodder will pay well anywhere. Oats may be sowed late after tree-planting time, and cut for fodder. The ground should be occupied by some crop, rather than by weeds; but regard for this crop should not prevent any desirable spring planting being made, and if some summer grain be employed to cover the ground, the grass seed should not be sowed with it as is usually done, unless

ample time may have been allowed for the fillings to settle, and to be regraded, and the surface soil to become homogeneous in character through tillage and weathering. Perhaps the best practice on tolerably level and well-drained land is to keep it fallow during the second summer, plowing and harrowing it as often as a tinge of green shows itself, indicating a crop of weeds. The first of September, or at any rate a few days after, should see the land newly plowed, leveled off with a broad scraper, where dead furrows or undesirable depressions of any kind exist, and harrowed thoroughly. If two or three hundred weight of Peruvian guano be applied and harrowed in, the effect will be satisfactory. Such land is in fit condition to receive the grass seed, and although it is almost universal for farmers to seed down to grass with some small grain crop, it by no means follows that this is the best way.

Grass sowed on well prepared soil does best alone. The quantity of seed should be liberal, and, as a rule, only those kinds of seed should be mingled which harmonize well. The "mixed lawn-grass" seed which is imported from England and sold by most seedsmen on account of its attractive name, and the idea that the greater the mixture of varieties the closer will be the sod, is undesirable. Many of the kinds of grass will not flourish, and those which retain possession of the soil do so after a struggle to oust the others. White clover is natural to most of our soils, so that it is rarely possible to keep a lawn clear of it. Still, as the beauty of a close shorn

turf is impaired by *spots* of this plant, it is ordinarily best to use a pound or two of the seed to the acre. There are certain commonly cultivated grasses which are an abomination on a lawn; among them Timothy, Orchard grass, and Rye grass. Our closest pasture sods consist chiefly of June or Blue grass, Red-top, Sweet Vernal grass, and White clover. We recommend, then, for seeding a lawn a mixture of June or Blue grass, and Red-top, in equal parts, a bushel of each, White clover, as above stated, and a dash of Sweet Vernal grass, which, however, exists in abundance in most soils, throughout the Middle and Eastern States. This last is a pleasant addition, as it gives out a fragrance when drying, which is exceedingly grateful. On stiff soils which will be subjected to alternate freezing, thawing, and washing, it is well to sow a bushel of oats with the grass seed. Should the oats grow too rank, they can be cut, and they will, if not too thick, form an excellent protection to the young grass, and disappear in the spring. After sowing, roll the land evenly.

Cleaning up the Garden.

We have noticed in the onion districts, that the best cultivators are exceedingly careful in cleaning up the land, after the crop is matured. Not only are all the weeds gathered that have escaped the hoe in the cultivation of the crop, but the whole ground is raked over and not a weed left to mature its seeds. They find it pays, in the labor it saves next year. It is partly on this account that onions are cultivated for years in succession upon the same land. It takes several years to get the weed and grass seeds out of the soil, and to give the crop the full benefit of the land. If the garden could have this thorough cleaning up, as fast as the crops are out of the way, it would make vegetables much cheaper. The pens are often out of the way in July, and the weeds have the ground the rest of the season. The potatoes and early cabbage are gone in August, and the weeds reign till frost comes. If you must have a crop to induce tillage, put in turnips. These will always pay where there is a pig or cow upon the premises. But with or without cultivated crops, keep every corner of the garden clean.

Wilson's Blackberry and the Small Fruits.

Wilson's Early Blackberry has been exhibited this season in great abundance, and of great size. One fruit grower assures the public that he has made it produce from 300 to 900 bushels per acre. At this rate of production, it will pay much better to grow blackberries than raspberries, which are thought to yield largely at 200 bushels per acre. It would seem a fair inference from the statement of cultivators, that blackberries will yield much more fruit to the acre than raspberries, and the price, judging from the retail market, is not much less. The truth is, with the single exception of strawberries, we have no adequate supply of the small fruits. Even whortleberries, that used to be dear at six cents a quart, are now retailed at 25 cents, and currants, that might be grown so easily, are still dearer. Fuller's Small Fruit Culturist ought to be sent on a mission to all the suburbs of our cities. We want to suggest to our Agricultural and Horticultural Societies the distribution of this work in special premiums at the fall fairs. It will do a good work. Published by O. Judd & Co. Price, \$1.50.

A Beautiful Climber.—(*Akebia quinata*.)

Many years ago Mr. Wm. Fortune, the celebrated adventurer in China, found along the hedges of Chusan a climber which was transferred to the green-houses of England, and for a long time valued as a green-house plant. Indeed, the first we ever saw of it in this country was in a house. But like many other things, which, at their first introduction, were regarded as tender, this has proven, at least around New York, and southward, perfectly hardy, and instead of growing it as a pot plant, it is now made to cover large trellises out of doors. It runs very freely and makes a dense covering of foliage. The engraving shows the shape of the leaves, somewhat reduced in size. They bear a general resemblance to our Virginia creeper, but are smaller, and of a duller green. The flowers appear in clusters from the axils of the leaves in May. Each cluster contains both staminate and pistillate (male and female) flowers. The flowers are not particularly showy, being of a dark purplish color, but their exquisite spring-like fragrance compensates for any deficiency in color. The outer flowers of the cluster are staminate, and consist of three colored sepals, with six stamens, while the central ones are smaller, and have from three to nine pistils. The rapidity of growth, and the fragrance when in bloom, render this a most desirable climber, not only for covering screens, but for growing over supports. We have seen it grow upon a cedar stake, which it completely clothed and made a most beautiful object. The name *Akebia* is a Japanese one, and the specific name, *quinata*, refers to the five-parted leaves. Botanists place the plant in the small family called *Lardizabalaceae*, of which we have no native representatives; our nearest relative is the Moonseed (*Menispermum*). We believe that the plant is kept by most nurserymen. Here we just wish to say a word to our correspondents. We scarcely ever publish a figure of a plant but we get letters asking for seeds. We have neither seeds nor plants (except those named in our premium list) to send, and cannot take orders for them, even from old friends. It is seldom that we illustrate a plant that cannot be had of the regular nurserymen, if a shrub or perennial, or the seeds of which cannot be had of the seedsmen. The large dealers who advertise with us keep all these things, and it is impossible for us to fill orders. In the case of entirely new plants, (and we sometimes have to notice such), we are always careful to say that they are not yet in market. We often forego the illustration of really desirable plants because we know that they can not be readily obtained by our readers.

Some New Peas.

The reports of the trials of peas at the Royal Horticultural Society's gardens, at Chiswick, are always interesting, as they give impartial accounts of experiments made with different varieties grown side by side, and in sufficiently large quantities to make the results of practical value. The trials this year show, as have the previous ones, that many new varieties are only old ones renamed. As most of the sorts thus put down

are not known with us, we do not give their names. The custom of furnishing an old pea with a new title is not unknown in this country. An English seed dealer informed us that he sent the same variety to several different dealers, who put it out each as his own "Extra Early." The pea which seems to have the greatest number of synonyms is the Daniel O'Rourke. This is itself a misnomer, it being really Sangster's No. 1, though the other name has become so widely known that there is not much probab-



AKEBIA QUINATA.

ity of its being changed. Of this variety, several stocks are known, differing in quality, according to the care that has been used in cultivating and selecting. Among the new peas the one the most highly commended is Laxton's Supreme, resulting from a cross between Laxton's Prolific and Little Gem. This variety is as early as the Daniel O'Rourke, and of better quality. The Gardener's Chronicle says: "A grand pea: the sample sent was remarkably fine—large, full pods, with 10 large peas in each, and almost as uniform in character as if from a mold." Other fine varieties raised by Mr. Laxton are William the 1st, and Alpha.—Interest always attaches to new things, and we watch their development with pleasure, though for many years lovers of this delicious vegetable have had no occasion to place their main reliance for early on other than the Daniel O'Rourke, and for late on any but the Champion of England.

Packing Fruit for Market.

If the old shopkeeper's maxim that "Goods well bought are half sold" is true, it is still more true that fruit well packed is half sold.

Many are pomologists for the love of it, and never sell fruit; such do not consider the commercial side of the question of much importance. They discuss varieties, settle which are best for family use, and which for market, but when it comes to the question of how to market, they think it outside of their province. Of late years, however, a new set of pomologists has sprung up,—those who hold that they should do good and make money. Especially do we meet these at the West, where we encounter men who have as keen an eye and palate as the amateur, and who not only know which are the best fruits, but which will pay the best. It is through the influence of such men as these that pomological bodies are brought to discuss the best ways of turning fruit into money. The Western State Societies, always wide-awake, often discuss the subject of packing and marketing fruit, and last year it occupied the attention of the American Pomological Society. The question of the best package for fruits is yet an unsettled one, except for apples, which are almost uniformly shipped in barrels. So important a matter is it for large fruit growers to get the best possible package, that Mr. Knox, of Pittsburgh, has offered a premium for those most suitable for berries and grapes, to be awarded at his grape exhibition in October next. Boxes are taking the place of baskets for peaches, and are better for choice pears than are kegs and barrels. There is one point upon which there is great want of uniformity—the size. When fruit is quoted at so much a box or crate, it is interesting to both grower and consumer to know what quantities these represent. So long as neither law nor custom establish the size, it will vary; but it is not easy to see why one should buy his peaches at a venture, while the law looks after his bushel of wheat.

But whatever the package, the manner of placing the fruit in it has much to do with its opening handsomely. Barrels and boxes are packed bottom upwards. The bottom of the barrel or box is removed, a layer of fruit neatly put in, with the stems all in one direction, and

the remaining space so filled that some pressure will be required to bring the head or bottom to its place. The mark is put upon the head or cover to be opened. In packing grapes in boxes, the same order is observed. In putting up fruit in this way, it is not necessary to practise "topping," or putting the best fruit where it will first meet the eye, but only to make the packages open handsomely, and their contents show at their best. Placing a small quantity of good fruit at the top after filling the box with that of an inferior quality is not only dishonest, but impolitic. As a St. Louis dealer said at the last meeting of the Am. Pomological Society: "I wish every shipper knew the value to him of a good reputation—of a reputation that will sell fruit-packages bearing his brand at the highest market price, without inspection. Every fruit-grower should aim to get such a reputation." We have already a great variety of bowls, boxes, and cups, with the crates to pack them in, and every year is adding to the number. They are of marvelous convenience and cheapness, and it will pay any fruit grower to visit this city to see what the inventors of the country are doing to help the sale of his products.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Sea-side Fare.—The Clam.

A New Englander who orders clams in New York is likely to be served with a quite different "shell-fish" from the one he had been accustomed to call the clam at home. That which is commonly called the clam in New York is the quahog of New England, while the clam proper is designated as the soft or long clam. The two are quite different in structure, habits, and flavor. The clam proper (*Mya arenaria* of the naturalist), is the one represented in figure 1. The shells are quite thin, and of a more or less distinct white, or often of a dull

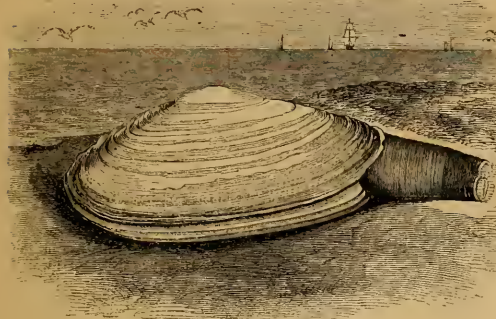


Fig. 1.—SOFT-SHELL CLAM.

lead color; the color as well as the size varying with the locality. At one end of the shell projects the siphon or "snout," which is capable of remarkable extension. The clam burrows in the sand along the margins of salt water bays and rivers, between high and low water mark. It is concealed at a depth varying from a few inches to a foot or more below the surface of the sand, and keeps up a communication with the water above it by means of its long snout, through which it takes its food. Clams are obtained by digging with a short handled hoe, when the tide is low. Their presence is readily discovered by the jets of water they throw up when alarmed by footsteps. They discharge a sudden stream of water and draw their snout completely within their shells.—The engraving, figure 2, presents the animal with one shell removed. The large, roundish body is popularly known as the belly, the narrow strip which nearly encircles it is the "rim," while the snout has been already spoken of. The snout and rim are covered with a thin and usually dark colored skin, which is easily separated, and is

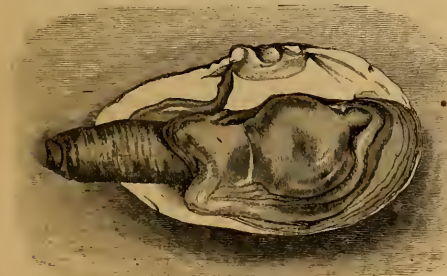


Fig. 2.—CLAM ON THE HALF SHELL.

removed in preparing the animal for food. Only the lower part of the snout is eatable, the upper portion being of a strength and elasticity to defy mastication. The tenderness and flavor of the clam vary in different waters, and in the same water there are beds the products of which are particularly prized. Clams are cooked in a variety of ways, the best of which is the aboriginal "clam-bake," an institution

which attains greater perfection on the shores of Narragansett Bay than elsewhere. In the summer season the shores of this Bay are visited by thousands of people, many of whom come from a long distance for the purpose of enjoying a clam-bake. The method of cooking is most primitive. A circle is paved with stones, upon which a fire is built. When the stones have become well heated the coals and ashes are swept off and the clams placed upon them in a heap and closely covered with a heavy coating of sea-weed. The clams are steamed in this way until they are done, which is indicated by the opening of the shells. They are served in the shell. Each guest is supplied with a cup of melted butter, to which pepper, vinegar, etc., may be added. The animal is picked from the shell, and the thin skin, before referred to, pulled off.

The snout furnishes a convenient handle for holding it while conveying it to the mouth, it first having had a dip in the melted butter. The snout is retained by the fingers while the tender portions are bitten off. A distant imitation of a clam-bake may be made by placing the clams in a closely covered pot over a fire until done. Fried clams are sometimes poorly done, by opening them, splitting open the snout, to remove the grit usually contained there, rolling in meal or crumbs, and frying whole. A much better way is to remove the bellies, cover with meal, and fry separately; the rins and the tender portions of the snouts are to be chopped fine, mixed with egg and flour to form a batter, and fried as fritters. Clams may be stewed after the manner of oysters, or made into a "chowder," which is a compound stew in which pork, potatoes, onions, etc., are used in varying proportions.

Tomatoes Next Winter.

This favorite vegetable is eaten with added relish during winter, when the garden is locked up, and "sauce" is hard to procure. A little painstaking now will secure a good supply for the time of need. Select ripe, sound tomatoes, place them in a colander, immerse them in boiling water to loosen the skins, lift them out, and peel them at once. Cook them in a porcelain lined kettle. Tin will answer if it be not much worn, but iron is easily corroded by their acid, and the fruit will be spoiled in color and flavor by its use. Stir with a wooden spoon or pudding stick. Tomatoes may be kept without very thorough cooking, but as they are largely composed of water the sauce will be much better if boiled down one-half or more of its original bulk. Put them up in tin cans if bottles cannot be procured, and solder the tops tight while the contents are boiling hot. This is a troublesome process, and fruit preserving jars or bottles, which are now easily had at almost every country store, will be preferred. With these, as with all vegetables or fruits to be kept air-tight, the one great point of care is to make them air-tight. Have the bottles heated that they may not crack, pour in the hot contents, filling the jar, and fasten the cover at once. By the use of fruit-preserving powders or solution, which prevent fermentation, less care is needed to exclude the air. Many who have used these preparations prefer them to the former method.

TOMATO CATSUP.—At the request of several inquirers we republish the directions given several years since in the *Agriculturist*. Select perfectly

ripe, sound fruit, cut in slices, and boil until the pulp is cooked soft. Rub it through a sieve to take out the skins and seeds, and replace it in the kettle for cooking. To each gallon of pulp add three table-spoonfuls each of salt, ground pepper, and mustard, and one of ground allspice. Enclose four large sweet peppers, and two or three garlics, or one large onion, in a small bag, and boil in the catsup. The garlic or onion may be omitted if the flavor is not relished. Cook it until of the right consistence. It should be just thick enough to run slowly from a bottle. When cool, pour it into bottles, cover them with a bit of cotton cloth tied on the neck, and leave it three months to ripen; then cork and seal.

Soap Cups.

Soap dishes of some kind are indispensable about the kitchen sink or wash room, if the housekeeper means to be neat and orderly. The illustration presents cheap forms of these articles. Fig. 1 is a berry bowl, such as is retailed in the market for four cents. It is turned in a lathe from poplar or



Fig. 1.

any soft wood, and makes a convenient dish for hard soap. Fig. 2 is made from two blocks of inch board, about $4\frac{1}{2}$ inches square, with a hole cut in the middle. Between the blocks a strip of copper or iron wire cloth is inserted, and the two blocks are pinned or screwed together so as to bring the grain at right angles. These dishes can be made at home, and have this advantage over stone chimneys or earthen ones, that they are not easily broken. We give quite frequently these illustrations of ornamental and useful articles, for the purpose of encouraging their home manufacture. In many parts of the country, where labor and material



Fig. 2.

are plenty, they can be made cheaper than they can be purchased, and making them serves to develop the mechanical skill of the boys, and affords them interesting and profitable occupation. A little work-shop, with a turning lathe and a tool chest, we think one of the best investments a father can make for his sons. They will spoil some good timber, some screws and nails, and cut their fingers perhaps, but will soon learn to use tools efficiently, and will get an education in practical matters quite as valuable as anything they learn in schools.

The Cooking of Vegetables.

In continuing our notes on the manner of cooking some of the less known vegetables, we give some that are seldom found upon farmers' tables, though there is no reason why they should not be.

EGG PLANT.—The fruit of this is egg-shaped when small, but as it grows large, it becomes irregularly rounded. It is fit for use from the time it is two or three inches in diameter, until the minute seeds begin to turn brown. It is singular that the fruit itself is called egg-plant; the name egg-fruit would be much more appropriate. In some places it is called Guinea Squash. It is one of those vegetables, which, like the tomato, most people do not relish at first, but of which after a few trials they become exceedingly fond. Even when most carefully cooked, it absorbs a great deal of fat, and is not suited to those whose digestion is feeble. The fruit is cut into slices about half an inch thick, pared, and the slices piled up on a plate with salt sprinkled between them, and allowed to lie for

an hour before cooking. Some omit the paring as well as the previous salting, but there is apt to be a slight acidity unless these are done. The slices are dipped in a thin batter, or in egg, and covered with powdered cracker, and fried until quite soft. Sometimes the batter, etc., are omitted, and the slices fried without any covering; in this way they soak fat and are very greasy. It is said that they are good stuffed with spiced bread crumbs, and baked, but we have never tried them in this way.

OKRA.—The pods of a plant related to the Holly-hock are eaten, especially at the South. They are from two to four inches long, several sided, and pointed at the tip. These should be taken before they become at all tough or fibrous, at which time they abound in a thick mucilage, which has no very positive flavor. Their chief use is in soups; the pods being sliced and added to the soup impart a richness and thickness. The "Gumbo" of the South is a thick soup or stew made with chicken and Okra. The whole pods boiled plain and dressed with drawn butter are fancied by many, and are considered a very nutritious and wholesome dish.

SALSIFY.—A white root, shaped somewhat like a diminutive parsnip, often called Oyster-plant or Vegetable-oyster. In season from the time the roots are as large as one's finger until spring. May be kept in the ground or in the cellar. In whatever way the root is used it is first to be scraped to remove the skin, and immediately thrown into water. If allowed to remain exposed to the air after scraping, the milky juice the root contains would soon turn to a disagreeable brown color. One of the simplest ways of cooking is to cut the roots in small pieces, stew in water until tender, make a sauce by adding butter and a little flour to thicken, and season with salt and pepper. To fry Salsify, boil the roots whole until tender, dip each one in batter, and fry; or wash the boiled roots, and make small cakes, which are dipped in batter and fried. Oyster soup, which is considered by some to bear a resemblance to oyster soup, is made by boiling the sliced root in water; when tender, add milk, butter, pepper, salt, and thicken with a little pounded cracker. A little pickled codfish is added by some cooks to increase the resemblance to oysters, but for ourselves we like salsify too well as salsify to wish to make it appear like anything else.

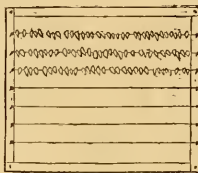
Household Talks.

BY AUNT HATTIE.

One of the nicest desserts for dinner this warm weather, I think, is ice cream. If properly managed, it is as cheap if not cheaper than most of the rich pastries and puddings usually found on our side table, and if not made of rich custard and pure cream, is much healthier. I often make mine of new milk only, flavoring with white sugar and vanilla. Of course if I have company or wish it extra nice, I add a considerable quantity of fresh cream. The freezing process is extremely simple. If one has a patent freezer or uses merely a tin pail, the method is much the same. Let the cream or prepared milk or custard be put into the tin, and placed in a cool cellar where it may get as cold as possible before trying to freeze. When ready, adjust the cream tin in the center of the wooden pail. If a patent is used, be careful to fasten the little hooks found on the bottom of the tin into the lathes on the bottom of the wooden pail. Break up into quite small pieces about 5 pounds of ice, and allow to that quantity a little over a pound of salt; put into the outside pail a layer of ice and a good sprinkling of salt, another quantity of ice and salt, until all is used. Let it stand a minute or two, and then commence to turn the handle for the purpose of stirring the cream and the freezing agents. Rapid freezing depends upon the ice and salt being brought constantly together. This can only be done by constant agitation. In the patents the agitator and cream-dasher work in unison. If the cream is long in coming to ice, put more salt in the outer pail. To an experienced operator, 5 pounds of ice and 1 of salt is quite sufficient to freeze 2 quarts of cream, and I have often placed more cream in the

tin after the first was used, and allowing it to remain, stirring occasionally, have had a pleasant surprise for callers in the afternoon and evening.

I think that I am justly proud of my ingenuity in inventing a drying frame. Its extreme simplicity puts it within the reach of every housekeeper. I got Edward to bring me from the carpenter a wooden frame, made light, but strong, and about 5 feet square. Also a small ball of white, but strong twine. I cut a quantity into lengths of 7 feet, and to one end of each fastened a tack, which was ham-



DRYING FRAME.

mered firmly on one side of the frame. About an inch and a half from this another string was secured in the same way, and exactly opposite to each tack a shingle-nail was driven firmly into the frame. When stringing apples or peaches for the purpose of drying I use a darning-needle, threading the loose end of the string, and when a sufficient quantity is threaded, take off the needle and wind the string around the shingle-nail opposite. As the fruit dries it may be slipped along the thread and more added until the frame is full of dried fruit. This is a very convenient frame as it may be taken in at night or during a rain storm without disturbing the fruit, and may also be adjusted over the kitchen stove and used for drying apples during the winter months.

A favorite dish for tea, I make as follows: Set to boil a quart of milk, beat the whites of three eggs to a foam, adding a very little white sugar, and a little lemon; put this to float on the milk. As soon as the milk boils, take off the foam and stir in the whites of two, and the yolks of five eggs, well beaten, with sufficient sugar to sweeten pleasantly. Take from the fire immediately, and set to cool. When nearly or quite cold, season the custard with lemon or vanilla, and pour into custard cups, or into a glass dish, and place the foam on the surface. It is a very handsome dish and eats as good as it looks.

The doctor says he likes my ripe tomato pickle better than any other kind. It is certainly the most easily made of any. I boil up a quantity of vinegar, spicing well with red peppers, allspice, mace, mustard seed, whole ginger, and horseradish, to about a gallon of vinegar, adding about the size of a butterfat, and a small quantity of salt; pour into a crock, and every morning as the tomatoes are gathered, select the smooth skinned, firm fleshed, and small sized ones, wipe and place gently in the vinegar, allowing a small plate over them to keep them under. The vinegar should be very strong and good. This pickle will keep all winter if stored in a cool cellar. Small cucumbers, small green tomatoes, radish pods, button onions, beans, and nasturtium buds, I gather from day to day, throwing them into a brine not too strong. In nine or ten days I drain from the brine, allowing them to stand in the colander four or five hours before pickling. After wiping dry and placing compactly in a crock or jar, I pour over a vinegar pickle made the same as for the ripe tomatoes, omitting the salt, however. On no account use cloves or cinnamon for green pickle, as it will discolor it sadly. Reserve those kinds of spices for peaches, plums, and all kinds of sweet pickle.

A Good Word for the Cabbage.

Cabbages, in cooking will leave an odor behind them, but ventilation is a ready remedy for this and other ills. The whole tribe is wholesome—Early York, Flat Dutch, Bergen, Green Savoy, Stone Mason, and Mammoth. Gregory of Marblehead ought to have a monument for growing them of 60 lbs. weight. For laboring people the cabbage is a great sustainer of muscle. For this reason

it is universally popular among our Irish and German fellow-citizens. By some it is thought to be indigestible, but this depends more upon the mode of cooking than upon the article. As cold stew it agrees with delicate stomachs, if they are in health. If not, vegetables and fruits of all kinds give trouble. Though an admirable accompaniment of a boiled dinner, it should not be boiled with the corned meats, and it should be thoroughly cooked. There is a difference, too, in the article. Green Savoy stands at the head of the list, and for those who cannot have cauliflower, is good enough.

Ladies at the Fall Fairs.

The best part of any agricultural exhibition is the people, and the best part of the people are the ladies. The legitimate aim of the fair is the instruction of the people in the details of their calling. We very properly measure the success of an agricultural exhibition, not by the multitudes that throng it, and the entrance fees, but by the instruction it affords to those who come. There should first be something to see, and then the more that come the better. No part of the exhibition is more instructive than that which appropriately comes under woman's supervision. The dairy belongs to her, and the bread, the needle-work and the fine arts, the flowers and the poultry. We are very far from perfection in any of these departments, and we should like to see the skill and enterprise of our fair countrywomen fully represented in the fairs that are just before us. The prizes are worth contending for, aside from those offered by the committees. "The best bread maker in the country" is an honor that would sit gracefully on any woman. The finest butter neatly stamped in golden balls is certain to be looked at, and the maker to be inquired for. Bonquets tastefully arranged will draw something better than the premiums offered. They will draw out the skill, and cultivate the taste of the makers, and give pleasure to the thousands who study them. Of course it will take time and labor to prepare for the fair, but could the labor be more worthily bestowed? These fairs, notwithstanding their perversions, are doing a good work in the education of the people. We have followed them for a score of years, and never attended one but we carried away new ideas and useful hints. It does us all good to come in contact with our fellows, and study their handiwork. It is a duty we owe to society to contribute our share to these exhibitions and make them successful and worthy of general patronage.

SUNSHINE IN SLEEPING ROOMS.—Sunshine is as necessary to the health of animals as plants, and we should contrive, if possible, to have our sleeping rooms upon the east and south sides of the house. We want more sunlight of the material kind, as well as the spiritual, in our houses. "Faded carpets!" you exclaim. Then out with them, or let them fade. Better a thousand times than have the roses fade from the cheeks of wives and children.

Preserving Crab Apples.

A beautiful sight is the crab apple tree, loaded with its ruddy or golden fruit, which loses none of its charms when well preserved upon the table. Core them with a penknife, leaving the hole as small as possible. Put a pound of refined sugar for every pound of prepared fruit in the preserving vessel, and add one cup of water to each pound of fruit and cook over a slow fire. When the sugar is all dissolved, and hot, put in the apples and boil gently until they are clear. Take out the apples, boil the syrup until it is thick, and pour into the vessels in which the fruit is to be kept. A few slices of lemon boiled with the fruit improves the preserves for those who like that flavor. The apples are sometimes preserved whole with $\frac{3}{4}$ of a lb. of sugar to 1 lb. of fruit, but they are not so nice. For immediate use, a $\frac{1}{2}$ lb. of sugar to one of cored fruit makes a nice sauce for roast meats.

BOYS & GIRLS' COLUMNS.

"Sunstroke."

Lightning strikes, and with terrible energy tears, melts, and destroys whatever would obstruct its passage; but properly speaking, the sun does no such thing. No sudden beam darts with resistless force to smite the unfortunate person who may be exposed in the sunshine. What is called sunstroke is really prostration from excessive heat, and it may occur in any overheated apartment in the shade as well as in the sunshine. Persons enfeebled by drinking, by over exertion, or other causes which lessen the strength, are most liable to be thus affected. During the hot weather of July, this year, when more than two hundred persons died from this cause, in New York alone, in a single week, it was observed that a very large majority were of intemperate habits. Confirmed teetotallers were exempt. No temperance lecture could be stronger. Usually there are symptoms of prostration by heat, occurring in time to avoid a fatal result. Trembling, faintness, inability to move, and a sinking feeling, usually precede the more marked effects. When any such feelings are experienced during extreme heat, all exertion should be instantly stopped, and the person lie down in the shade at once until entirely relieved. Cold water or ice applied to the head, and some stimulant administered with judgment, will aid in recovery. Prevention is not difficult. All excess in food, drink, or exercise, and much excitement of any kind, should be especially avoided, when the mercury in the thermometer marks 90 degrees or upward. If work must be done, a cabbage leaf or wet handkerchief placed in the top of the hat will serve a good purpose.

Curious Gambling.

A traveler describes a singular mode of gambling witnessed by him in Peru. A negro having a large tray of pies takes his stand at some corner where many are passing. Those who wish to engage in the game, usually boys, each place a penny on some one of the pies, which are valued at five to ten cents each. The proprietor then with a small brush drives away the flies which swarm over the eatables, and all anxiously wait to see on which pie a fly will first alight. If it be on one where a penny is placed, it becomes the property of the person who laid down the penny, and the remainder of the money is taken by the owner of the pies. A similar style of gambling has been practised in Paris, by dissolute young men who place several lumps of sugar upon a table, and then bet as to the lump on which a fly will first alight.

Ways of Getting a Living—IV.



TRY YOUR STRENGTH, SIR?

The apparatus shown in the above engraving, called a *dynamometer*, is very popular in a crowd. Every man, and every boy especially, likes to be strong, to know the power of his muscles, and if it be more than ordinary, to exhibit it. So the man who lets people try their strength at a penny apiece finds it quite profitable. The writer once discovered a trick of this trade while trying the machine with a number of friends. Being of about ordinary strength he could lift probably 400 lbs., but pulling at the dynamometer he was astonished to find he had lifted over 600 lbs., according to the mark on the dial plate. The proprietor complimented the surprising strength shown by a not very large man, but the latter sailed to notice how the apparatus was arranged to show more than the real strength laid out. If such trials of strength, carefully made, so as not to strain the person, would lead to the use of proper means of increasing one's muscular power, the exhibitor of the dynamometer might

be classed among the useful members of society. Dr. Winship, the strong man, who lifted 2,000 lbs. or more, showed how muscle can be increased by training. Such extraordinary lifting power is not needed, and costs more time and work than it is worth, but it proves that every healthy young person can improve his strength sufficiently if he will patiently labor for it by taking proper exercise.

A Private Picture Gallery.

Fine pictures that were ever painted on canvas may be owned by many without expending a cent. By training the eyes to observe, the imagination to arrange, and the memory to keep the scenes presented in every day life, or described by others in books and newspapers, one may furnish his inner apartments most gorgeously. Artists do this before they try to show their thoughts in pictures for the eyes of others, and every painter will tell you that the scene in his own mind is far more beautiful than anything he can express with pencil and brush. Perhaps there is a mountain not far from where you live. It looms grandly up toward the sky, and cannot fail to make a strong impression on the mind of one living near it. Now, it is not difficult with such a strong point to begin with, to work up a fine picture gallery. You can imagine all the varied changes of color which vines and flowers would give; new trees may be grouped here and there; a torrent rushing down the side, with a catarract midway, with the deep rugged gorge which it has worn away, will change the scene; you can build castles and palaces along its sides, and a towering fortress at the top, and set phantom soldiers, or real troops in armor, or with shining bayonets, climbing up the sides, and charging among the well defended works. If there is no such striking feature in the surrounding landscape, then make one. Read the best description you can find of forest, lake, or mountain, and bring it before you. There is no end to the variety of choice landscapes which may thus be possessed, and the making of them will not only fill any man otherwise unimproved hour with pleasure, but refine the taste, and purify and elevate the thoughts.

"Little by Little."

A nut dropped by a squirrel fell through the opening in the middle of an old millstone which lay upon the ground, and being thus protected, grew into a thriving sapling that shot up through the opening. In a few years it had increased so that it filled the space and was firmly wedged to the sides of the heavy stone. Still it grew, and in a few years more, little by little it lifted the entire weight clear from the earth, so high that a man could sit beneath it. All was done by atom after atom, borne by the sap to the growing trunk. Think of my little man, puzzling over "Long Division" in arithmetic; little by little of thinking and working will take you through Fractions, Rule of Three, and those terrible problems at the end of the book, by and by—but be sure that the little by little is not neglected. And you, hard working lad on the farm, or in the shops, look at Franklin, Washington, Morse, Field, Lincoln, Grant, and thousands more who have lifted the weight of circumstances that would hold them down like millstones, and who have by their steady perseverance risen above their fellows, easily bearing their burdens; and "Keep pegging away."

A Great Structure.

An exchange gives the following particulars concerning the dome of the Capitol at Washington. It is an hundred and eight feet higher than the Washington Monument at Baltimore, sixty-eight feet higher than that of Banker Hill, and twenty-three feet higher than the Trinity Church spire of New York. It is the only considerable dome of iron in the world. It is a vast hollow sphere of iron, weighing 8,300,000 pounds. How much is that? More than four thousand tons, or about the weight of seventy thousand full grown people; or about equal to a thousand laden coal cars, which, holding four tons apiece, would reach two miles and a half. Directly over your head is a figure in bronze, "America," weighing 14,985 pounds. The pressure of the iron dome upon its piers and pillars is 13,477 pounds to the square foot. St. Peter's presses nearly 20,000 pounds more to the square foot, and St. Genevieve, at Paris, 66,000 pounds more. It would require, to crush the supports of our dome, a pressure of 753,280 lbs. to the square foot. The dome cost about \$1,000,000.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the August number, page 301. No. 314. *Logograph*.—The principal word is *peat*. From the letters may be formed, 1, Pat; 2, Pea (one syllable of peacock); 3, Pet; 4, Pate; 5, Tape; 6, Tap. No. 315. *Mathematical Problem*.—4,338 feet, nearly. No. 316. *Picture Puzzle*.—It is a holy see (holcy C) in the midst of fies (of O's). No. 317. *Metagram*.—Meat, peat, feat, seat. No. 318. *Puzzle Pic-*

ture.—Death and Time are a pair of dividers. No. 319. *Puzzle Picture*.—A bee laboring (be laboring). No. 320. *J. grand, a pett*, (A, large, a, small), read together, 'I al grand appetit; meaning I have a great appetite.—As this part of the paper is sent to press very early in the month preceding publication, it usually occurs that the names of those answering puzzles are not published until two months after the appearance of the puzzles. The following have sent in correct answers to problems, etc., previously published. Jas. E. Masters, A. N. Daniels, Charles P. Anderson, Alice May Carrington, Eva Gray, J. Milton Snyder, Columbus Snyder, Mina M. Walker, Rufus M. Farrand, James A. Johnson, A. D. Wexler, R. Hall, M. Gathaw, Frank T. Wray, Isabell Lucy Stewart, Sarah Dowland, Martha Richardson, Samuel M. Edwards, Edgar Tupper, Frank E. Cabot, G. Wood.

No. 321. *Puzzle Picture*.—How does this remind you of a sound on the sea shore mentioned by poets?No. 322. *Puzzle Picture*.—This man, in climbing after his goose, is in danger of falling. How may he get down safely?No. 323. *Illustrated Rebus*.—Very good advice to travelers.

No. 324. *Metagram*.—A word of five letters causes the notion of the heavenly bodies. Change the first letter and it becomes a pleasant retreat; a fortress; a dressmaker; a waterman; a haysmaker; what frightened men often do; and a gift to a woman. What is the word?

No. 325. *Word Puzzle*.—In my first my second sat, my third and fourth I ate. What is this curious word?



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THE ORPHANS. — FROM A PAINTING BY C. H. POYNDESTRE. — Engraved for the American Agriculturist

The kids have had their morning frolic, chasing each other round and round the hill, skipping from rock to rock, rearing and butting, jumping with all-fours off the ground and giving an extra kick when in the air by way of flourish, and capering as only kids can. — By the way, our English word *capre* comes from the Latin, *capra*, which means a goat. — These little fellows having finished their play and taken a nibble at the grass and weeds, are now dozing in the sunshine, and enjoying such rest, as only exercise, innocence, contentment, and peace, can give.

The kid makes a very amusing pet, and can be trained almost as easily as a dog. Being docile and very strong and active, he may be broken to harness and made to draw a little wagon nicely. We have frequently seen a double team of young goats before a small cart, with a boy for driver, going at a merry rate, and obeying the bit like well-broken horses. They are very mischievous; no tree or plant is safe where they are kept. They seem very fond of nibbling the bark from the trunks of young trees. Here in the city they are often seen tearing down the show-bills posted on fences, and munching them like hay or straw. The feet of the goat are curiously formed, to fit it to climb among the rocks where it lives in a wild state. They are bordered with a sharp edge of horn, which keeps them from slipping easily, and they bound fearlessly over crags inaccessible to most other animals.

A Snake Story.

A foreign paper relates that a large case containing two huge serpents was deposited in a warehouse in Algeria, for shipment to the Zoological Gardens in Marseilles, France. While there, a cat found her way into the case, and was instantly enveloped in the coils of the reptiles, whose appetites were sharp from long abstinence. She was soon crushed to death, and both snakes commenced the process of swallowing her, one beginning at the head, the other at the tail. The teeth of such creatures are so placed, hooking backward, that they cannot let go when once they have commenced to swallow, and so the two serpents soon were brought face to face, and quite a struggle ensued. Finally, the larger of the two made a desperate attempt to swallow the other, was choked in the endeavor, and both died. The whole three unfortunates

are on exhibition, preserved in alcohol. The directors of the Zoological Garden intend to bring a suit against the parties who were to forward the serpents, for having allowed the cat to enter the cage, and the owner of the cat, it is said, claims her skin, to keep as a curiosity.

"Rich as Cæsus."

Who was Cæsus? How rich was he? He was the last king of Lydia, in Asia Minor. He reigned 560 years before Christ. He was successful in wars with surrounding countries, and captured immense treasures. The river Pactolus which flowed through his lands yielded abundance of gold dust from the sands of its bed, and he accumulated vast wealth. His riches are reported to have been seven or eight millions of dollars. At that period of the world's history, money would buy many times more than now, so that we may estimate him to have been worth a great many millions of dollars according to present standards. A number of men living in the United States are reputed to be worth more than Cæsus. He did not find money a sure support, although for a time it surrounded him with all his extravagant desires craved. While enjoying luxurious abundance, he thought himself the happiest man living; and he was quite offended when Solon, one of the wise men of Greece, told him that no man should consider himself happy until his death. Not long after this, Cæsus lost his favorite son, Atys, who was killed while hunting, and only a son who was dumb was left. Misfortune followed him. Having engaged in war with Cyrus, the Persian monarch, he was defeated, his kingdom taken from him, and himself condemned to be burned. As the sentence was about to be executed, he exclaimed, "Oh, Solon!" Cyrus inquired the reason of this, and Cæsus related what Solon had previously told him; whereupon his life was spared.

"The Old Oakon Bucket."

A fine picture representing the scene of this beautiful and familiar poem, which is now on exhibition, recalls the circumstances under which the lines were written. The author, Samuel B. Woodworth, was a printer in this city. Near the office where he worked was a drinking house to which he often resorted in company with his

friends. One afternoon, Woodworth, after taking a drink of brandy, declared it was superior to anything he had ever tasted. "No," said one of his friends, "you are mistaken; there was one which we used to think was far better than this." "What was it?" asked Woodworth. "The pure, fresh spring water, that we used to drink from the old bucket that hung in the well, on our return from hard work in the fields on a hot day," was the reply. Woodworth sat for a moment much affected. "True, true," said he, and shortly after left the place. He immediately returned to the office, and under the inspiration of the recollections of his happy childhood, wrote the lines that have become familiar as household words.

Quite a Difference. — A little conversation between two boys, overheard at Central Park by one of our editors, is worth repeating. They were in the building where the animals are kept. "Come, let's go on and out into the Park," said the first boy. "Oh, you go on if you want to," was the reply; "you only want to look at the animals. I want to see them." Twenty years from now, which of these boys will be likely to know the most?

The Invention of Envelopes.

It is related in the Stationer, that these conveniences were first introduced as follows: About forty years ago there lived at Brighton, in England, a bookseller and stationer of the name of S. K. Brewer, and he used to place in his shop window piles of paper, beginning at the largest up to the then smallest size, 16 mo.; but to finish off the pile he cut cards, so as to bring them up to a point. Ladies used to go in and ask for that "dear little paper," which induced him to cut paper in small sizes. Then came the difficulty of the place for address; and the result was he invented the envelope, and had metal plates made for cutting them to shapes and sizes. This just pleased the ladies, and orders came to him for the little paper and envelopes from all parts. This at length became such a demand upon his time that he got Dobbs & Co., of London, to make them for him. Such was the beginning of the envelope trade, now extending over the world, and in which millions of dollars are invested.

(Advertisements on this Page \$2.50 per Line of Space).



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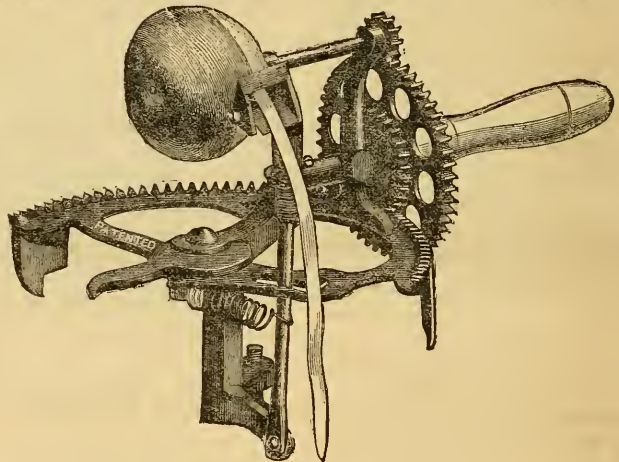
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The book presents the most remarkable collection of facts, methodically arranged, concerning our domestic animals and plants, yet brought together, and for this alone, it is of the highest value. [St. Louis Journal of Agriculture.

Whatever may be thought of Prof. Darwin's peculiar theories, there can be no doubt that his works form a large and important addition to human knowledge. In the present volumes his theory is connected with a vast variety of interesting and important facts, which have great practical value apart from the hypothesis they are brought forward to sustain. [Boston Transcript.

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[Springfield Republican.

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Frequent mention has been made in the columns of the *American Agriculturist* of Cresylic Compounds, as being valuable for destroying insects on animals and plants, and for other purposes. For some months past we have been investigating the merits of these preparations, with the following results.

Cresylic Acid is extracted from gas-tar, to which it gives the peculiar odor perceived on burning the tar. It has been used to a limited extent by chemists and physicians, for various purposes, and their experiments have shown it to possess remarkable properties as a disinfectant, and in destroying insect life and fungus growth. In its ordinary form it could not be readily applied, and hence was not available for common use. About two years since, Messrs. JAMES BUCHAN & CO., of New York, well-known as extensive manufacturers of family soaps, conceived the idea of combining this acid in saponaceous compounds. By long and careful experimenting, they succeeded in producing soaps in various forms, possessing the active properties of this acid, and thus bringing it within the reach of all classes. These compounds have been patented.

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BROOKLYN, November, 1867.

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JOHN L. KYDER, } Committee on Jails
STEPHEN CLARK, } of Supervisors of
D. S. VOUGLSEN, } Kings County, N.Y.

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5 lb. Canisters.....	\$1.25
10 " " " " " " " " " "	2.25
50 " Kegs.....	10.00
200 " Tubs.....	35.00

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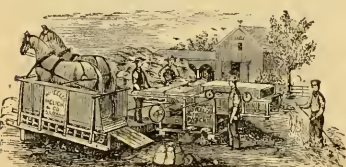
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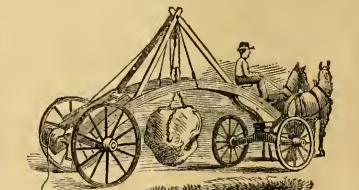
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VOLUME XXVII.—No. 10.

NEW YORK, OCTOBER, 1868.

NEW SERIES—No. 261.



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MEEDER—CHIES SC

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second growth. Every State of the Union was once the home of the wild turkey, but now, east of the Alleghenies, it is almost unknown. Domestication is easily accomplished, and crosses with the domestic species are made with great advantage. The wild turkey is distinguished from others by the entire lack of white bands or tips on the feathers, by its more delicate head, the bluer color of the naked skin of the head, the longer and larger tuft of hair up-

on the breast, and by the more brilliantly metallic hues of the feathers of the neck and body. The legs are also longer and more slender. Turkeys seldom gain their full growth before they are five years old, and an old wild gobbler of large size is one of the most magnificent of birds, being remarkable for the glow of coppery red, purple and golden hues which flash over his back, and the changing tints of the peculiar carunculations of the neck.

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NEW-YORK, OCTOBER, 1868.

Somber yet happy Autumn is here; the landscape wears the sere and yellow hues, blended with red and green, the more brilliant for the contrast. But for the sighing winds and the chill that is in the air, and the drifts of leaves that are swept across the view, one might take October for the gayest month of the twelve. And it is gay. Why should the falling of the leaf inspire sad thoughts? All things grow old as do garuncits, and like them they are changed with the season, or in their appointed time. If we change with them it should be as the buds mature on the trees, to burst into leaf in the spring, or as the fruits and seeds ripen for the Master's use, or as the bulls wrap up the vital germ which will rise into a new and beautiful life when the spring-time comes. This is the season of abundance, when man and beast prepare for the coming winter. The days are growing shorter, and long evenings invite to reading, study, and meditation. The experiences of the summer, the results of the harvest, the memorandums and recollections of what was seen at the fairs, furnish topics of conversation and induce visiting among farmers. Fruits and nuts and sweet cider may well add to the sociability. Such visits will, we hope, in many instances ripen into farmers' clubs, with their reading rooms or circulating libraries, and meetings for discussion, for exchange of seeds, and for the exhibition of products of the soil, or of skillful hands.

One of the most important things for farmers to think about and plan for this month is good winter schools. Do not say by your actions or concern, brother farmers, that "Half an education is good enough for farmers' children," or that "Larmin' spiles a farmer," as the writer was once told, but strike for a first rate public school, as the very foundation of local prosperity, and as the greatest security against lawlessness and vice; in most neighborhoods, an extra expense of \$25 to \$40 each on the principal families will secure rooms and teachers for the public school; that will afford advantages to *all* the children, which are usually obtained by only two or three children who are packed off to an "academy" at an expense of a hundred or more dollars each. Make the public school equal to an academy. This matter will bear talking, thinking, and figuring about.

Hints about Work.

Farm work at this time of the year is naturally classified in order of its importance; as 1st, Necessary Autumn work, that which must be done now, like the harvesting of the corn and root crops, gathering the fruits of the orchard, etc. 2d. Spring work which may be done now, as preparing the ground for spring crops. 3d. Winter work, that which may appropriately be done at any time during the winter, such as getting out timber or cutting fire-wood, work in the muck beds, etc. It is well to bear this in mind, so as to make all

work tell to the best advantage. One may easily find work for a few weeks for cheap labor if he can secure it at this season, and thus relieve himself of just so much cause for hurry or anxiety by and by.

Animals—ature provides nuts for the squirrels, mast for the swine, the seeds of cereals (grasses and grains) for the cattle, both small and large, and innumerable insects for the feathered tribes. Thus they all fatten readily, and prepare for severe weather not only by laying on a warm coat but by storing fuel for maintaining internal warmth. The weather is not severe, yet shelter will be found to make quite a difference in the rapidity of fattening. Cook, if possible, all or most of the feed of fattening animals, except, perhaps, sheep, which it is claimed can gain nearly as fast and are more likely to remain healthy on uncooked and even whole grain. Keep beees and sheep at pasture as long as the feed is good, and give grain morning and night. Hogs should be kept growing and gaining by well cooked food in more or less variety. Give them a few shovelfuls of wood ashes in which is a good deal of charcoal, and throw a few handfuls of corn into a

Milk Cows if well fed will give rich milk, if not a great deal of it; and as rich and beautiful butter may be made now as in any month. After sharp frosts the pasturage will be less nutritious. Feed pumpkins, (removing the seeds, which are excellent for hogs), roots, turnip tops, cabbages (that do not head, etc. Decaying leaves and rotten turnips will make the milk taste. Cows must have all the pure water they will drink, and salt is essential to thrive.

Culves and steers will "get along" on coarse fare; they will not starve on wheat straw, or bog hay, with some corn stalks; they will probably not starve if they stand out until next March on the north side of a barn; but they will be stunted in their growth, and never have any thing like the form or size they should and would have had. One of the highest pleasures of a good farmer is to see his young stock grow. They need shelter quite as much as the older cattle, and if a pet heifer or pair of nice steers get a few ears of corn more than their share, the farmer had better wink at it unless it is carried too far. That the liberal hand shall be made rich is constantly demonstrated in the barn-yards of this country. Don't attempt to carry over too much young stock; that kept should be well fed.

Horses.—As pasturage begins to fail, commence regular feeding and grooming in comfortable quarters.

Purchase of Stock for Wintering.—The hay crop has been abundant, and many will buy sheep and cattle to consume their surplus straw, hay, and grain, and to make manure. Buy so as to give them a good start on grass before winter sets in.

Full Mowing for Spring Crops.—There is great economy in plowing in the autumn. It must only be attempted on land not exposed to wash badly. It is well also to regard the direction of prevalent winds, and if the lay of the land is such that the fine particles which the wind will move a distance of several rods, will be blown off the farm, this will be an argument in favor of spring plowing. Plow deep, if there is richness enough in the soil or manure enough applied to warrant it.

Roots usually make the best part of their growth after frost; yet they will not stand severe freezing without harm, and it is risky to leave them undug after the ground begins to stiffen mornings, for some fine day you will find them all frozen and solid. A good, well-ventilated barn-cellar, which may be closed so as to keep the frost out, is the best place for storing roots; but they keep perfectly well in pits, or out-door cellars. See page 566.

Root Pits may or may not be pits; if actually in part below the surface, the drainage must be perfect. If above the surface, first place the roots in uniform piles, say 6 feet wide, 3 feet high, and as long as convenient; cover with a few inches of straw and a light covering of earth, and let them lie lightly covered for a few days. Provide ventilation by placing bundles of straw upright in the ridge of the heap. As the cold increases, add to the thickness of earth until the roots are covered about a foot deep at all points. Remove the earth for covering, so as to leave good ditches to carry off water.

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Potatoes.—Dig when the vines are dead. Store as directed on page 364. Potatoes are not roots, and require different treatment. The tubers are fleshy underground stems. They are more sensitive to frost, and do not require the same amount of ventilation.

Sorghum.—It is best to make clean work as you go. Cut up, top, and strip at one operation; bind with two bands, and if possible have the stalks hauled at once to the mill. The seed makes good feed for sheep and other stock, and the dried leaves and suckers tolerable fodder. We would be glad to know how they compare with corn fodder.

Corn.—Husk when the corn is hard and the husks dry. Bind the stalks and set them up in well-braced stooks, bound firmly at the tops so that they will stand through a gale of wind, and shed rain. See article on Corn Fodder, page 363.

Sowing Crops.—Wheat and rye may both be sown for spring feeding. See hints last month, p. 315.

Winter Grain.—Wheat often does well sown as late as the early part of this month, but it is better, as a general rule, north of lat. 41° to sow earlier, and to put in rye if the time has passed by, even though the land be prepared for wheat. Rye may be sown any time during the month on good land with assurance of a well paying crop.

Draining.—This is one of the most favorable seasons for pushing ahead this kind of work. Labor is usually cheaper, and it interferes less with the work of the farm—either by disturbing the fields, or taking hands from other work. Make thorough work; half-way work never pays in the long run.

Weeds.—On wet days cut weeds, put them in heaps, and burn them when dry. The ashes will be of some use; the seeds will be killed.

Buildings.—Push forward all necessary repairs; tighten up barns and sheds, look out for loose clapboards, and patch shingle roofs. It is not best to re-roof barns at this season when they are full of hay. Many nails in hay are often fatal to cattle and horses, and a few are bad for their teeth, and also for hay cutters of all kinds.

Cooking Hay for Cattle kills weed seeds, many of which would otherwise pass through the animals, and grow when carried to the field in manure.

Work in the Horticultural Departments.

The leaves have done their work! All summer long they have taken the sunlight and given off nothing but green, but now that their work is accomplished, they and the sun are having a gala time of it, and they throw his light back in crimson and gold. The fruit, too, which has heretofore been green, now splashes itself with carmine, and turns its ruddy cheek to the sun. The Great Artist puts the last touches to the fruit in the beautiful waxen bloom that betokens perfection. The harvest of the orchard and the great harvest of the forest are this month gathered. The ripe leaves lighten the scene with their transient glow, and dutifully fall to the earth to give up what they have received. Did you ever look at the place from which a leaf has fallen? Just there is a bud all ready for next spring's work. Is not there a lesson here, when even an inanimate leaf, as we are accustomed to call it, thus early makes provision for another year? We might dwell upon this point, but as old Boerhaave says: "I have said enough for those who take me, and for those who do not, nothing would be enough."

Orchard and Nursery.

Picking of the late varieties of fruit is mainly done this month. Hand picking with every care to avoid bruises is the only method to be commended. Place the fruit carefully in bins or on shelves in the fruit cellar, or put in barrels at once.

Barrelling should be done in clean new barrels; take out the bottom head, place the fruit in regular layers, and fill to about an inch above the chime; bring the head into place by means of a screw or lever press. A few of the apples next to the head will be indented, but the rest will be held in place and will not bruise in transportation. Turn the

barrel over and mark the top with the name of the variety. Never put more than one kind in a package and keep poor fruit out altogether. Keep the fruit, whether in barrels or not, at as low and uniform a temperature above freezing as possible.

Late Pears may be treated the same as apples. Autumn varieties should be placed on shelves where their progress in ripening may be watched.

Cider Making.—The best cider is made from the best fruit. A rich saccharine juice is needed to make the finest article. Assort the fruit and convert the inferior lot into vinegar. Put the juice into clean casks, and allow the fermentation to go on slowly in a cool cellar. When the fermentation has ceased, rack off into other clean casks and bung up.

Vinegar.—A good article of cider vinegar finds a ready sale. See article on vinegar on page 367.

Pomace may go to the piggery or into the compost heap. If seeds are wanted, wash them out before the pomace ferments. In washing large quantities a continuous stream of water is required. This is run into a box in which the pomace is placed. The pomace being stirred the lighter portions are carried off by the flowing water, and the heavier seed remains. Collect and dry it.

Planting may be done if the land is in good order. Lay out the ground beforehand, either in regular rows or in the quincunx order. The last plan allows the land to be occupied to the best advantage. For details and other hints on laying out an orchard see last March *Agriculturist*, page 102.

Labels are often so wired to nursery trees as to cut the bark when growth commences. See to these as the trees are planted. While labels are convenient for reference in the orchard, do not trust to them, but have a record or map of the position of each variety. Plant the same variety together.

Nursery Stock.—Look to that budded this autumn, and loosen the tyings if needed. Manure between the rows of the older stock, and cut back the growth to give a proper shape to the trees.

Fruit Garden.

Planting of shrubs and trees may be done whenever the autumns are usually mild, and it is better to do it now with the blackberry and raspberry than to wait until spring, as the buds start early.

Raspberries and Blackberries when set out should have the canes cut back to the ground. If left, a slight crop may be gathered next summer at the expense of the future welfare of the plants. Raspberries may be set from 4 to 6 feet apart and blackberries from 6 to 8 feet. If grown as a hedge, they may be placed much nearer, say half the distance.

Gooseberries and Currants may be pruned whenever the leaves have fallen. Cut out as much of the old wood as will leave the bush open, and shorten this year's growth one-half, more or less, according to its vigor, cutting back the weakest shoots the most severely. Use the prunings of new wood for

Cuttings, which are to be about 6 inches long and planted 4 inches apart in trenches, with only an inch above the surface. Ram the soil firmly against the base of the cuttings, and cover the bed with leaves or litter when freezing weather comes on.

Grapes.—Full ripeness is desirable, whether they are to be used for the table or for wine. Grapes to be packed for winter should be allowed to stand a few days to "cure." They are then put in 5 or 10 pound boxes, which are to be packed full, the cover, or bottom rather, crowded on with a slight pressure and nailed. The boxes are then to be kept in a cool, dry room at an uniformly low temperature, but the fruit must not be allowed to freeze.

Strawberries started in pots may still be planted.

Kitchen Garden.

Prepare the Soil for spring crops. Sod ground may be manured and plowed, as well as land from which crops have been removed. Plowing is now much more easily performed than in spring. Stiff land should be thrown into ridges, to get the benefit of the ameliorating action of the winter's frosts.

Protection to those crops left out over winter ought not to be given too early. All of these plants are nearly hardy, and there is danger of smothering them if covered too soon. Many things make a good growth in the warm autumn days.

Preserving Roots, etc.—Only in very cold localities will roots need to be stored for winter as early as this month. It is best, however, to have everything ready to store and house the crops should heavy frosts make it necessary. If cellars are used for storing, have bins, barrels, etc., ready. Pits are better than cellars. They must be made in dry ground, where the water will drain off. They are made 3 or 4 feet wide and 6 feet deep. A section 2 feet in length is packed with roots, then 6 inches from that another similar section, and so on. The spaces between are filled with earth, and later in the season all are covered with earth. This is only done when freezing weather is at hand.

Asparagus.—When the tops turn yellow, cut and burn them. Do not put them in the compost heap, as the seeds retain their vitality, and if distributed in manure produce troublesome "weeds."

Beets.—Let them grow until hard frosts are at hand; then dig and store in pits or in the cellar.

Cabbages.—Prepare frames for wintering young plants, which should be a foot high at the rear and 8 inches in front, wide enough for the sash to be used, and as long as needed. They should be set on light soil and where water will drain off readily. The plants are to be set 2½ inches apart each way, deep enough to cover all the stems. Do not cover with sash until the approach of freezing weather.

Cauliflowers.—The young plants to be wintered are to be set as directed for cabbages. Gather the late crop as it is ready. There are often many plants that do not head. These, at the approach of frosty weather, should be set in a pit or light cellar, and many of them will form heads.

Celery.—Finish earthing up. The earth is to be banked up against the stalks nearly to the top of the leaves. In most places, next month will be early enough to store it away for winter.

Lettuce.—Young plants may be set in frames, as directed for cabbages. In warm localities young plants of the hardy kinds, covered with leaves or other light litter, will pass the winter safely.

Horseradish is to be left in the ground until frost, when it is to be dug and preserved like other roots.

Rhubarb.—Where vegetation is at rest, new plantations may be made. Cut an old root so as to leave a bud to each piece, and plant in rich soil.

Spinach.—Keep the late crop clean. In cutting for use, take it from those portions of the rows that are most crowded and need thinning.

Squashes.—See article on preserving on page 363.

Sweet Potatoes, when the vines are first touched by frost, are to be dug. In digging and handling be careful not to bruise them. Those to be kept should dry for a day in the sun, and then be packed in sand, cut straw, or leaves. Whatever material is used must be perfectly dry. Keep in a warm and dry place, where the mercury will not fall below 60°.

Flower Garden and Lawn.

The weather is now more favorable than in spring for all work like grading, road and walk making, draining, laying out borders, and the like.

Lawns.—In preparing for these a deep and rich soil is necessary, and usually drainage is required.

House Plants that have been during summer in borders should not be left there too late. See article on the treatment of these, page 370.

Chrysanthemums, especially of the tall-growing kinds, will need stakes; the weight of bloom, especially when wet, is apt to break them down. Pot for house blooming when the buds are well developed.

Primulas of most kinds need to be taken up every few years, divided and reset.

Ranunc.—These almost always fail to flower if removed in spring. Take up the roots early this month, while they are dormant, divide so as to have a bud with each piece, and plant in deep, rich soil.

Hardy Bulbs are sufficiently noticed on page 370.

Tender Bulbs, such as those of *Gladiolus*, *Jacquin*, *Lily*, Mexican Tiger Flower, etc., are to be taken up when the leaves are killed, dried a little, properly labeled, and stored in a cool, dry place, where they will not freeze or be troubled by mice.

Dolphins are to be left awhile after the frost kills the stems. Take them up in the morning of a dry day and let the roots remain in the sun to dry off, label securely, and store them where they will not freeze or be too damp. The same treatment may be given to tubers of the Madeira Vine.

Trees and Shrubs.—All the hardy deciduous ones may be transplanted now, and hedges of deciduous shrubs, such as *Buckthorn*, *Privet*, etc., may be set.

Protection to half hardy things should not be applied until quite cool weather. The object is not so much to prevent freezing as to avoid frequent changes. Materials should be in readiness. Collect leaves from the lawn or wherever they can be found. One of the best materials is the boughs of the Red Cedar. Where these can be had in abundance a good supply should be laid in. A coating of light peaty earth upon beds of seedlings of perennials serves as an excellent protection. Salt hay, readily procured near the coast, is a favorite material with gardeners living in those districts.

Green and Hot-Houses.

The more tender plants are to be taken in first. Have the pots in good order. Top-dress the plants by removing the surface soil and giving a supply of rich compost. Have the plants when taken in free from

Insects, the fight with which must be always on the offensive, and prevention is better than cure.

Bulbs.—Directions for potting, etc., are given on page 370. Whenever the ball of earth is well filled with roots, the pots, a few at a time, may be brought in and the plants forwarded.

Forcing Plants.—Many of the perennial herbaceous plants and shrubs are used for forcing. In France the *Lilac* is forced in large quantities. Those most commonly treated in this way here are *Lily of the Valley*, *Dicentra*, *Deutzia gracilis*, *Wiegelia*, *Astilbe* (*Spiraea*), *Japonica*, etc. The plants are to be potted and kept in a cool place until it is desired to bring them into flower.

Cuttings of bedding plants should be made at once, if it has not already been done, and seeds of *Annuals* for winter blooming be sown.

Pots and Soil and all necessary materials for winter use should be got under cover before winter. *Ventilate* as much as the weather will allow, and make the transition from free air to the confinement of the house as gradual as possible.

Cold Grapery.

The function of the leaf is not generally understood. An intelligent person asked us the other day why we did not strip off the leaves from a vine, and it seemed to be news to him that they would drop of themselves when they were no longer needed. The leaf is only a temporary appendage, as is shown by its being jointed to the vine. When the vine has no further use for it it falls. Keep the house rather warm by the use of the upper ventilators only, to finish the ripening of the wood, but close all up in damp and cold weather.

The Fairs for 1868.

State and National Fairs.

Chili (S.A.)	Santiago, commences	Dec 15
Indiana	Indianapolis	Sept. 28-Oct. 3
Iowa	Clinton	Sept. 28-Oct. 3
Wisconsin	Madison	Sept. 29-Oct. 3
Minnesota	Minneapolis	Sept. 29-Oct. 2
Pennsylvania	Harrisburg	Sept. 29-Oct. 2
New York	Rochester	Sept. 29-Oct. 2
Maine	Portland	Sept. 29-Oct. 2
New Jersey	Waverly	Sept. 29-Oct. 2
Kansas	Leavenworth	Sept. 29-Oct. 2
Colorado	Denver City	Sept. 29-Oct. 2
Nova Scotia	Provincial, Halifax	Oct. 5-10
Nebraska	Nebraska City	Oct. 7-9
N. H. Mech. Art. Assn.	Concord	Oct. 6-9
Virginia & North Carol.	Border Fair, Danville, Va.	Oct. 20
Maryland Inst.	Baltimore	Oct. 20
Tennessee	Clarksville	Oct. 20
Arkansas	Little Rock	Nov. 3-7
National Horse Show	Providence, R. I.	Oct. 6-9

Horticultural Exhibitions.

N. Y. Grape Growers' & Canandaigua	Oct. 7-8
Lake Shore Grape Grow.	Oct. 7-8
ers	Pittsborough, O.
Knob's Grape Show	Pittsborough
Virginia Horticultural & Pomological	Richmond, Oct.

County and Local Fairs.

Oxford	South Paris	Oct. 6-8
Waldo	Belfast	Oct. 13-15
West Oxford		Oct. 13-15

NEW HAMPSHIRE.

Mechanical & Art	Concord	Oct. 6-30
Mechanical & Art	Concord	Sept. 29-Oct. 2

VERMONT.

Addison Co.		Oct. 6-8
Caledonia	St. Johnsbury	Sept. 29-Oct. 1
Whitland Co.	Newfane	Sept. 30-Oct. 1

MASSACHUSETTS.

Barnstable Co.	Barnstable	Oct. 13-14
Bristol Co.	Taunton	Oct. 6-8
Berkshire Co.	Pittsfield	Oct. 6-8
Honolistic	Great Barrington	Sept. 30-Oct. 2
Hampshire	Franklin & Hampden	Northampton
Hampden Co.	Springfield	Oct. 6-7
Rampden, East	Palmer	Oct. 13-14
Marshall	Marshall	Oct. 1-2
Marblehead	Marblehead	Oct. 1-3
Martha's Vineyard	West Tisbury	Oct. 20-21
Nantucket	Nantucket	Sept. 29-Oct. 1
North Wrentham	Farmers' Club	Oct. 6-7
Worcester South	Springfield	Oct. 1-2

CONNECTICUT.

Hartford	Hartford	Oct. 6-8
Honolistic	New Milford	Oct. 8-10
Litchfield	Litchfield	Sept. 29-Oct. 1
Madison Co.	Madison	Oct. 6-7
Miford and Orange	West Haven	Sept. 30-Oct. 1
New London	Norwich	Oct. 6-7
Ridgefield	Ridgefield	Sept. 29-Oct. 2

NEW YORK.

Chemung Co.	Albany	Oct. 7-9
Columbia Assoc.		Sept. 29-Oct. 1
Delaware Co.	Walton	Sept. 29-Oct. 1
Madison Co.	Cannastota	Sept. 30-Oct. 2
Montgomery	Fonda	Sept. 29-Oct. 2
Otsego Co.	Coopersstown	Sept. 29-Oct. 2
Schoharie Co.	Schoharie	Sept. 29-Oct. 1
Steuben Co.	Bath	Oct. 6-8
Warren Co.	Riverdale	Sept. 29-Oct. 2
Washington Co.	Salmon	Oct. 7-9
Westmoreland	Hampton	Oct. 7-9
Winfield	Winfield	Sept. 30-Oct. 1
Yates Co.	Pont Yan	Oct. 7-9

NEW JERSEY.

Burlington Co.	Mount Holly	Oct. 6-7
Huntington	Fair Grounds	Sept. 29-Oct. 1
Warren Co.		Oct. 6-8

PENNSYLVANIA.

Allegheny	Allegheny	Oct. 6-9
Blair Co.	Hollidaysburg	Oct. 6-9
Clelland Co.	Clelland	Oct. 13-16
Columbia Co.	Bloomersburg	Oct. 14-16
Crawford Co.	Clearfield	Oct. 13-16
Crawford Co.	Conneautville	Sept. 30-Oct. 2
Franklin Co.	Chambersburg	Oct. 6-9
Union Co.		Oct. 7-9
Union Agr. Soc.	Gettysburg	Oct. 8-9
York Co.	York	Oct. 6-9

MARYLAND.

Frederick Co.	Frederick City	Oct. 20-23
Washington Co.	Hagerstown	Oct. 13-16

OHIO.

Ashland Co.	Ashland	Sept. 29-Oct. 2
Augusta	Carroll Co.	Sept. 29-Oct. 1
Butler Co.	Hamilton	Oct. 6-9
Champaign Co.	Urbana	Sept. 29-Oct. 2
Coshocton Co.	Coshocton	Oct. 6-9
Delaware Co.	Delaware	Oct. 6-9
Eric Co.	Sandusky	Sept. 30-Oct. 3
Fairfield Co.	Lancaster	Oct. 7-9
Garrettsville	Portage Co.	Sept. 29-Oct. 1
Hancock Co.	Findlay	Oct. 1-3
Hancock Co.	New Manchester	Oct. 14-16
Harrison Co.	Cadiz	Oct. 6-9
Highland Union	Garrettsville	Sept. 29-Oct. 1
Independent	Haysville	Oct. 6-9
Jackson Co.	Jackson	Oct. 1-2
Lake Co.	Conneautville	Sept. 29-Oct. 2
Logan Co.	Bellefontaine	Oct. 6-9
Madison	Franklin Co.	Sept. 29-Oct. 2
Mahoning Co.	Cantfield	Oct. 6-8
Medina Co.	Medina	Oct. 6-9
Meigs Co.	Rock Springs	Oct. 1-2
Mercer Co.	Celina	Oct. 7-9
Orwell (Towa)	Ashtabula Co.	Sept. 29-Oct. 2
Ottawa Co.	Oak Harbor	Oct. 6-9
Orville	Wayne Co.	Oct. 14-16
Plymouth Co.	Plymouth	Oct. 7-9
Seneca Co.	Tiffin	Sept. 29-Oct. 2
Summit Co.	Seneca	Sept. 29-Oct. 2
Stark Co.	Canton	Oct. 7-9
Thompson	Geauga Co.	Oct. 1-2
Union (Greene Co.)	Marietta	Sept. 30-Oct. 2
Wayne Co.	Wayne	Sept. 30-Oct. 2
Wellington	Lorain Co.	Oct. 7-9

INDIANA.

Jennings Co.	Vernon	Sept. 29-Oct. 2
Wayne Co.	Centerville	Oct. 6-10

WISCONSIN.

Crawford Co.	Deutsen	Oct. 8-9
Fond du Lac Co.	Fond du Lac	Oct. 6-8
Jenouen Co.	Mauston	Oct. 6-8
Lafayette Co.	Clarksville	Oct. 6-8
Marquette Co.	Montello	Oct. 7-9
Ontagonia Co.	Grand Chate	Oct. 7-9
Platteville	Platteville	Oct. 7-9
Walworth Co.	Elkhorn	Oct. 6-8

ILLINOIS.

Ag'l. Institute	Sandwich	Sept. 29-Oct. 2
Bacon Co.	Baldvire	Sept. 29-Oct. 2
Bael In. & Putnam Co.	Honolistic	Sept. 29-Oct. 1
Bellevue Co.	Carroll	Sept. 29-Oct. 2
Douglas Co.	Tuscola	Oct. 6-9
Franklin Co.	Benton	Oct. 7-10
Fulton Co.	Canton	Oct. 13-16
Greene Co.	Carrollton	Sept. 29-Oct. 2
Henderson Co.	Biggsville	Sept. 29-Oct. 2
Jo. Daviess Co.	Galeana	Sept. 29-Oct. 2
Kane Co.	Geneva	Sept. 30-Oct. 3
Kankakee Co.	Franklin	Sept. 29-Oct. 2
Kendall Co.	Bristol	Oct. 6-9
Knox Co.	Knoxville	Sept. 29-Oct. 2
Logan Co.	Lincoln	Sept. 29-Oct. 2
Macoupin Co.	Carthage	Oct. 13-16
Marion Co.	Salem	Oct. 6-9
Mercer Co.	Millersburg	Oct. 6-8
Monroe Co.	Waterloo	Oct. 13-15
Montgomery Co.	Hillsboro	Oct. 6-9
Ogle Co.	Oregon	Oct. 7-9
Peoria Co.	Peoria	Oct. 6-9
Perry Co.	Tamara	Oct. 7-9
Pike Co.	Pittsfield	Oct. 6-9
Pope Co.	Galena	Oct. 1-3
Sangamon Co.	Springfield	Oct. 2-10
Shelby Co.	Shelbyville	Oct. 7-9
Schuyler Co.	Rushville	Oct. 6-9
Stephenson Co.	Freeport	Oct. 6-9
Tazewell Co.	Tremont	Sept. 29-Oct. 2
Vermilion Co.	Carlin	Oct. 6-9
Warren Co.	Monticello	Oct. 6-9

MICHIGAN.

Bay Co.	Bay City	Oct. 6-8
Benzie Co.	Benzena	Oct. 7-8
Berrien Co.	Buchanan	Sept. 30-Oct. 2
Calhoun Co.	Lansing	Sept. 29-Oct. 1
Clinton Co.	St. Clair	Sept. 29-Oct. 1
Genesee Co.	Flint	Sept. 29-Oct. 2
Ionia Co.	Grand Rapids	Sept. 29-Oct. 1
Kalamazoo Co.	Hillsdale	Sept. 29-Oct. 2
Leonia Co.	Ionia	Oct. 7-9
Livingston Co.	Howell	Oct. 6-9
Macomb Co.	Romeo	Oct. 7-9
Oakland Co.	Pontiac	Oct. 6-9
Ottawa Co.	Lamont	Oct. 7-9
Saginaw Co.	Saginaw	Sept. 29-Oct. 9
Tuscola Co.	Watronsburg	Oct. 6-8
Washtenaw Co.	Ann Arbor	Oct. 7-8

MINNESOTA.

Goodhue Co.	Red Wing	Oct. 14-16
Goodhue (Township)		Oct. 1

KANSAS.

Anderson Co.		Oct. 14-16
Franklin Co.	Ottawa	Oct. 8-9

IOWA.

Allamakee Co.	Waukon	Oct. 8-9
Bremmer Co.	Waverly	Oct. 6-8
Clayton Co.	Emerysburg	Oct. 9
Crawford Co.	Denison	Oct. 8-9
Des Moines Co.	Burlington	Oct. 6-9
Jefferson Co.	Fairfield	Oct. 7-9
James Co.	Anamosa	Oct. 6-9
Tama Co.	Tama	Sept. 29-Oct. 2
Wapello Co.	Ottumwa	Oct. 13-11
Wayne Co.	Corydon	Oct. 8-10

MISSOURI.

Adair Co.	Mexico	Oct. 12-16
Boone Co.	Columbia	Sept. 29-Oct. 3
Carroll Co.	Carrollton	Sept. 30-Oct. 2
Chariton Co. Ag. and Mech.	Keosauqua	Oct. 15-18
Clay Co.	Liberty	Oct. 4-9
Cole Co.	Jefferson City	Oct. 13-18
Fulton Co.	Canton	Oct. 15-16
Geary Co.	Albany	Oct. 14-15
La Fayette Co.	Lexington	Oct. 29-35
Linn Co.	Linnens	Sept. 30-Oct. 3
Lewis Co.	Canton	Sept. 29-Oct. 2
Montgomery Co.	Montgomery	Oct. 6-9
Monterey Co.	New Florence	Sept. 29-Oct. 3
Moniteau Co.	California	Oct. 6-9
New Florence	Montgomery Co.	Sept. 29-Oct. 3
North Missouri Stock		Oct. 27
Salisbury	Salisbury	Oct. 27
Platte Co.	Platte City	Sept. 29-Oct. 3
Salina Co.	Minim	Oct. 13-16
St. Louis Co.	St. Louis	Oct. 13-16
Vernon Co.	Nevada City	Oct. 13-15
Warren Co.	Warrenton	Oct. 14-17
Washington Co.	Potosi	Sept. 29-Oct. 2

KENTUCKY.

Barren Co.	Glasgow	Oct. 6-9
Carroll Co.	Carrollton	Sept. 30-Oct. 4
Fayette Co.	Lexington	Sept. 29-Oct. 1
Henderson Co.	Henderson	Oct. 6-10
Green Co.	New Liberty	Oct. 6-9
Warren Co.	Bowling Green	Sept. 29-Oct. 2
Washington Co.	Springfield	Sept. 29-Oct. 3

TENNESSEE.

Giles Co.	Pulaski	Oct. 5
Hart Co.	Nashville	Oct. 29-31
Montgomery Co.	Clarksville	Oct. 5
Robertson Co.	Springfield	Oct. 13-17
Warren Co.		Oct. 1-3

CANADA.

Compton Co.	Quebec	Oct. 6-9
Essex Co.	Windsor	Oct. 7-8

Time for Wheat.—"P. T. M." Dayton, O. "Will line secure good wheat crops upon our Western soils?" The favorable wheat crops of Pennsylvania, to which you refer, are not secured by time alone. The line is applied but once in a rotation of from five to seven years, and then with Indian corn on soil. Oats follow the corn, and manure is spread and plowed in for wheat. Your lands want ammonia quite as much as lime.

self to breeders of animals, whether on the large or small scale, to growers of plants, and indeed to the intelligent and curious generally. The book is one of such importance that Dr. J. D. Hooker, President of the British Association, thus referred to it in his inaugural address. "Mr. Darwin's recent two volumes on 'Animals and Plants under Domestication' are a catamount of data, observations and experiments, such as assuredly no one but himself could produce. It is hard to say whether they are most remarkable for the number and value of the new facts they disclose, or for the array of small forgotten or overlooked observations, neglected by some naturalists and discarded by others, which, under his mind and eye prove to be of first rate scientific importance." The work has been only about seven months before the public, and there have been two English, a German, Russian, Italian and American edition already published. The American edition contains all the author's additions, and is the most complete of any. Two handsome volumes, illustrated, and with a copious index, sent by mail for \$6.

Splendid Premiums, such as have never been equaled in this or any other Journal, are offered by the Publishers in the premium sheet of this number of the *Agriculturist*. The premiums include nearly all of the excellent articles offered last year; other good new things, such as the Early Rose Potato, Watches made particularly for us, Field Croquet, etc.; and especially a fine lot of Breeding animals. We would like to impress the fact, for it is a fact, that one or more of the premiums can be obtained at every Post-Office in the United States and Territories, in British America, etc., etc. Human nature is the same everywhere. What was done in 3,000 to 4,000 places last year can be done in 25,000 places this year. The work will pay well, and do good besides. Every one read through the premium sheet.

"How Crops Grow."—This is the expensive title of a new work by Professor S. W. Johnson, of Yale College, just published by Orange Judd & Co., and announced in an advertisement on another page. This work supplies a great lack in English literature, and, in fact, in the agricultural literature of the world. It brings to the careful reader interested in the practical operations of the farm and garden those profound results and views of science which lie at the basis of scientific agriculture. The subject discussed is by no means all of agriculture. The book is a guide to the knowledge of agricultural plants, their composition, their structure and modes of development and growth; of the complex organization of plants, and the uses of the parts, the germination of seeds and the food of plants, obtained both from the air and the soil. Very full and accurate tables of analyses are given, and tables of the proportions existing between different principles, oily, starchy, or nitrogenous, in the same and different plants. The book is an invaluable one to all real students of agriculture. It is fully illustrated, and will be sent by mail for \$1.50.

Whitlock's Grape Show.—An exhibition of grapes will be held in Mr. Whitlock's rooms, in the *Agriculturist* building, beginning on the 1st inst. Mr. Whitlock has much better facilities for exhibitors than we are able to give, and we shall hold no grape show this year. We hope that the friends who helped us to make last year's the finest show of native grapes ever seen in this country, will enable Mr. Whitlock to excel that, if possible. Interesting discussions may be expected on the days of exhibition, to which all are invited.

Spring Balances.—"J. D. K.," Toledo, O., asks "if the ordinary spring balances are trustworthy?" Serious suspicion has fallen upon them, from the fact that they are so popular with retailers. It must be a very well tempered spring, better, we fear, than gets into our balances, that does not grow weak by habitual use. This weakness, however small, makes an error in favor of the seller. The Canadian government has prohibited the use of spring balances in the Dominion, and we suppose they are of the same kind used this side of the line. It will be well for our housekeepers to weigh their purchases, when they get home, and for the scales of weights and measures to look after the parties who use spring balances. If purchasers find short weight, they can refuse to trade henceforth with those who use them, and thus drive the balances from the counter.

The Tim Bunker Papers.—Squire Bunker, whose letters, published through many volumes of the *Agriculturist*, have given farm matters at Hookertown a world-wide celebrity, has collected his writings, and Orange Judd & Co. have published them in a neat volume of 312 pages. The long-time readers of the *Agriculturist* do not need an introduction to the Squire, as they look upon him as an old friend. Though

T. B. Esquire, writes in the Connecticut vernacler, there is more sound common sense, and real information upon agricultural matters in this work, than is to be found in many more pretending volumes. His old friends will gladly welcome the collected writings of Mr. Bunker, and we can promise those who are not familiar with them, not only instruction but amusement from their perusal. The distinguished artist Hoppin has tried his pencil on some of the inhabitants of Hookertown, and given a series of characteristic illustrations. Price by mail \$1.50.

Increase in the Consumption of Sugar.—There is a good time coming for the sugar growers, if we may rely upon the statistics given in *De Bow's Review*. The Anglo Saxon race use 1,140,000 tons of sugar per annum, or 41.40 lbs. per head. The Latin race use 12.34; the Teutonic, 7.30; the Slavonic, 3.30. The total consumption of the countries from which returns can be obtained is 2,030,000 tons; about 15 lbs. per head. If it were increased to the standard of Great Britain it would amount to 6,150,000 tons. As the nations gain civil and religious liberty and advance in civilization, they increase in their ability to enjoy the comforts and luxuries of life. The people of the United States use fifteen times as much sugar per head as the people of Russia, Poland, Turkey, and Greece.

Black Pekin Egg Plant.—Those who have tried this variety give good accounts of it. It is a very vigorous grower, and bears abundantly of large and almost black fruit, which is most excellent upon the table.

Writing a Volume.—Some correspondents ask so many questions at once that it would require a small volume to answer all of them. They often ask us to tell them "all about" the culture of fruits, or have a certain number of acres that they wish us to lay out for them. While we are not only willing but glad to answer questions, we cannot write treatises every month.

The American Entomologist.—The first number of this paper, devoted to "bug" literature, has appeared. It is a neat monthly, of 30 pages, well printed and illustrated. The articles are exceedingly popular and practical in character, and have a liveliness not often found in writings on scientific matters. Published by R. P. Studley & Co., St. Louis, Mo., at \$1 a year.

The Eumelan Grape.—This is a chance seedling which originated on the banks of the Hudson. Dr. Grant, perceiving its merits, purchased it some time ago. The grape is of first class as to quality, and ripens at least as early as the Hartford Prolific.

Sundry Humbugs.—Congress, in an act "To further amend the Postal Law," passed July 27th, 1898, Sec. 13, says: "And be it further enacted, That it shall not be lawful to deposit in a post-office, to be sent by mail, any letter or circular concerning lotteries, so-called gift-concerts, or other similar enterprises offering prizes of any kind on any pretext whatever." We again bring prominently before our readers this Section of the postal law, so that none need err through ignorance or misunderstanding. It is desired at Washington that all evidence bearing upon guilty parties be sent to them, and we trust that all will bear in mind the suggestion made last month, and when they receive letters of the Gift-Enterprise sort request their postmasters to send them to the General Post-office.... We have to notice this month: Hunt, Anthony & Co.; Gold Watches, valued \$175, for sale at \$10 each. Gentlemen, the design of your certificate is too old and well-known to mislead our readers. Can't you try something new?... We have thus far failed in every endeavor to find the parties advertising very largely as C. A. Taylor & Co., and M. Noyes & Co., No. 80 Nassau-street. These two firms are evidently one and the same, apparently differing only in name. The person or persons who manage the thing represent themselves as "General Agents" for the "Managers," etc. Their plan proposes for \$10 to rob their managers of \$1,200, and to send the same to any person furnishing the original \$10, provided that the receiver on his part will show the money to his neighbors and say he got it as a chance lottery prize in said company. "You are to show the money. The result will be that hundreds of dollars will be sent to us for tickets, etc., which they, of course, will pocket. Here it is in a 'nutshell.' We will help you to \$1,200 of our managers' money, if you in turn will help us to rob your friends and neighbors. A nice little plan this! We think the proper authorities should hunt such scoundrels up and bring them to justice, and that whoever owns the building should clean it out.... Dr. J. S. Scoville & Co. have succeeded in swindling the public by means of travelling agents in some parts of the West. All persons

will remember that no such firm can be found at the number given, or in our City Directory. Dr. A. B. Church, Columbia, Ind., puts forth most infamous teachings, which should not be followed by any body.... The "Great Western Gift Co.," Evansville, Ind., Frederick Edwards & Co., Managers, are on the "make," and propose to send any body a "fortune for ten cents." Pretty good, Mr. Edwards; please send us one, marked C. O. D. We have carefully figured out the probable expense and income of this concern, and we give it for the benefit of our readers. Amount offered in prizes, \$435,400. No blank tickets. No prize worth less than \$1. Suppose no prize would exceed one dollar in value, then it would stand thus: 435,400 tickets at 10c, each amounts to \$43,540 for \$43,540 in prizes!! This would seem absurd enough, but far greater absurdity is shown in the ostensible scheme. The first 3,211 prizes represent \$31,850 at least, in prizes ranging in value from \$5 to \$50,000 each; a ticket for each of these prizes at 10c. will bring \$321.10. The remaining sum—supposing one ticket to every dollar would require 203,550 tickets at least, each—would be \$20,355.60 for prizes amounting to at least \$203,550. The total amount, then, for all tickets is \$209,675. Fifty per cent of this is offered to agents for selling tickets, and then comes in the long list of expenses for printing, office rent, clerk hire, etc., etc. But suppose \$10,000 to pay all expenses including per cent to agents, the net income would be \$10,675, and the out-go in prizes \$435,400!!! Friends, don't you want a fortune for 10 cents? We have given the above figures thus minutely to enable all to see at a glance the absurdity of such swindling concerns. All lotteries are more or less after this same plan. They offer much for a little, and their own schemes, if followed like the one above, would soon ruin them; but they don't follow them, nor do they even pretend to; the sole aim of these scoundrels is to induce people to send them money, and once in their pocket, it is never seen again by the sender in any form.... Beware of one G. W. Parsons. We are informed that he has been getting subscriptions at Mt. Gilead, Ohio, for this and many other papers. We have received no subscriptions from him—do not know him, and set him down as a bungler.

The Comparative Value of Grapes, other things being equal, depends upon the amount of sugar contained in the juice or mast. In view of this fact, the Pleasant Valley Grape Growers' Association will hold at Hammond's store, Stenben Conny, N. Y., a saccharometer test on the 28th inst. The saccharometer is an instrument for indicating the amount of sugar contained in the juice, and the Association proposes to subject all the samples of grapes to the test, that may be sent for the purpose. The committee is one in which the public may have confidence, as it includes persons interested in grape culture from all parts of the country. The circular of the Association says: "A general invitation is hereby extended to all who have grapes of value or promise, new or old varieties, to be present and participate. No effort will be spared to make the meeting both interesting and profitable to all who may attend. Persons wishing to have their grapes examined, and being unable to attend in person, may forward them to this place, in care of George W. Nichols, President of the Association, who will pay charges and see that they are justly dealt with. It is desirable that as many as ten pounds of each variety be sent, to insure a full examination; but a smaller quantity will be accepted, and given all the attention possible. In all cases they should be accompanied with a statement giving name, kind of soil, age of vine, &c. Truths and facts alone are sought after, therefore no premiums are offered or will be awarded."

A "Vine Borer."—In Missouri a borer kills vines by cutting them off at a distance of 8 or 10 inches below the surface. C. V. Riley, State Entomologist, has the chap under surveillance, and we shall probably have his portrait and history in the *American Entomologist*.

A Peach Fungus.—Dr. Hull, as we learn from the Transactions of the Horticultural Society of Alton, Ill., finds a fungus upon the roots of peach trees, which speedily exterminates them. As it spreads from tree to tree, his treatment is to destroy the fungus by burning all diseased peach trees, root and branch.

The Scuppernong Grape.—Mr. M. T., Garrett, S. C., sends us some specimens of *Sera*, which is now becoming an important fruit in those Southern States where the climate is suited to it. The wine has many remarkable peculiarities, and we hope to refer to it more in detail at another time.

The Casabar Melon.—Mr. Henry A. Dreer, seedsman, of Philadelphia, sent us specimens of a melon, the seeds of which he received under the above

name. It is evidently one of the Persian melons. One of the specimens weighed 13 pounds, and if there is a more sugary, tender-fleshed, and altogether good melon than this, we should like to see it. Mr. D. says that some call it the Large Persian. This melon, "by any other name would taste as sweet."

For All Children, Toy Dealers, Variety Stores, etc.—For the benefit of the "little people," we have encouraged the manufacture of a good stock of "Crandal's" Building Blocks, which we consider the best instructive toy ever produced—one furnishing amusement without end and, and not a simple toy to lose its novelty in a day. During the summer our artists have got up engravings of a portion of the numberless structures made from a single box of these blocks. These engravings are combined on a sheet, which is a picture of itself. Copies of it will be sent free to all Toy Dealers, Keepers of Variety Stores, Merchants, and to families desiring me. Send application and address to the Publishers of the *Agriculturist*.

Elements of Agriculture.—Col. Geo. E. Waring, long known as an agricultural writer, has re-written his earliest work, and it is now published by the Tribune Association. This little work is eminently practical, and is written in a plain, simple style. Statements of agricultural theory of the present day are less positive than they were a few years ago, and Col. Waring has exhibited commendable discretion in carrying his readers over the hard places in a very common-sense way. It is the best book we know of to explain to a young farmer the reasons for correct farm practice, that can be bought for anything like the price, which is \$1.00.

Strawberry, President Wilder.—In the *Agriculturist* for August last, Wilder's No. 13 was noticed as an excellent fruit, and the wish then expressed that it might bear Col. Wilder's name has been complied with. The berry is to be known as President Wilder. The publishers of the American Journal of Horticulture have, with commendable enterprise, purchased the whole stock of plants, which they offer as premiums to subscribers to their journal for 1869. Horticulturists thus will have an opportunity of testing a new variety of great merit, and one which it is hoped will prove elsewhere as fine as it has upon the grounds of Col. Wilder.

Plants Named.—"Subscriber," Bristol, Ind. Wild Yam-root, *Dioscorea villosa*, sometimes cultivated as a climber.... C. C. Moore, Johnson Co., Kansas. Feathered Hyacinth, a variety of *Muscari comosum*.... C. M. Burgess, New Britain, and Mrs. S. A. P., St. Jo., Mo. Mich. The "foliage plant" is *Coleus Terschaffeltii*. It is very tender, roots readily from cuttings, but is rather difficult to keep through the winter unless you have a greenhouse. The flower is small, something like that of Mint, and not showy.... M. R. A. Elliot, Me. No. 1, Twin-flower, *Linnaea borealis*, named for the great Linnaeus; No. 2, Bitter-sweet, *Solanum Dulcamara*; No. 3, only broken leaves without flowers.... G. W. C., Benton, Tenn. No. 1, *Panercium rotatum*, has no common name, not poisonous; please send some bulbs by mail. No. 2, Blue-bottle, *Centaurea Cyanus*. No. 3, Japan Globe-flower, *Keria japonica*, not a rose, though related to it. No. 4, Indian Currant or Coral-berry, *Symphoricarpos vulgaris*.... Mrs. V. J. M., Henry Co., Mo. An Evening Primrose, *Oenothera*; cannot tell the species without seed-pods.... Mrs. S. P. A., St. Joseph Co., Mich. The prickly-leaved "Aurea geranioides" is some *Solanum*, but cannot tell which from leaves alone.... M. E. J., Harrisonville, Ill. *Gladiolus ranunc.* Sword-lily.... J. R. H., Ottumwa, Kan. *Euphorbia marginata*.... O. R., Brumfield, Ky. Dodder, *Cuscuta Gronovii*, common as a parasite on shrubs, etc., both East and West.... W. C. C., Joppa Village, Ms. The grass which came up in your yard is the Canary-grass, *Phalaris Canariensis*; not valued for forage.

Mr. Buchanan's Sale.—Mr. Isaac Buchanan, the well-known florist, will sell at his grounds at Astoria on the 7th a large lot of his choice specimens. We have seen the plants, and can assure those who wish to stock their houses with well-grown Camellias, Azaleas, etc., that a rare opportunity is presented to do so.

Horticultural Exhibitions.—"A Secretary" says that the reason we get no more notices of horticultural exhibitions is that in many cases the agricultural societies advocate a combination with them, and the result is neither an Agricultural nor a Horticultural exhibition, but a horse-race. He asks "Cannot this evil be remedied in some way?" Certainly; when asked to combine, don't do it. But few plants will flourish in the shade of others, and the same thing holds good with societies. Horticultural societies should have their shows

separate, if they are held in a private house and only the members attend. The writer was one of the founders of a now prosperous society which began thus humbly.

Reid's Nursery at Elizabeth has long been a sort of pomological Mecca. The faithful will regret to learn that the old place is to be invaded by improvements, and that the grounds are to be cut up by streets and avenues. Mr. D. D. Buchanan, Mr. Reid's successor, is offering his stock preparatory to breaking up at the old place and removing to a new one. It is gratifying to know that the home grounds are not to be destroyed, and that the beautiful hedges and specimen plants that have afforded gratification to so many will still remain as a memento of one of the fathers of American horticulture.

The N. Y. Grape Growers' Association will hold its first Annual Fair at Canandaigua on the 7th and 8th. It is intended to include the grape, its product, and the implements which pertain to its culture, gathering, preparation for market, etc. Articles may be sent to M. Dwight Manger, Canandaigua. But who *will* make up the committees? There are men on some of them whose profound ignorance of fruit makes us think that they were put there as a joke. Still, there are enough eminent pomologists associated with them to keep them from blundering too badly.

Peach and Nectarine.—Just as the article on page 371 was put in type, where reference is made to peaches and nectarines growing on the same tree, we received from Mr. H. Downie, Winchester, Kansas, specimens of both fruits from the same tree. We cannot "explain the phenomenon," as Mr. D. requests. The nectarine is a sport of the peach, and may come by variation in the seed or by bud variation. This breaking out of an inherent quality in plants and animals is the foundation of an ingenious hypothesis by Mr. Darwin, who presents it at length in his work on Variation of Animals and Plants under Domestication.

Trouble with Crab Apple Leaves.—J. W. Sparkman, Cliffton, Tenn., sends some leaves of the Wild Crab Apple, which have large, rusty-colored spots on them and altogether in a bad condition. He states that it affects trees in the orchard and "is satisfied that it is caused by insects." Insects have enough mischief to answer for, but in this instance they are not guilty. The microscope shows the spots to be collections of minute parasitic fungi, of the kind called Cluster-cups. It is *Eddium Pyramum*, first described by Schweinitz in 1832. A description would be too long for a basket article, but we will endeavor to figure it at another time.

Insect Named.—G. Williams, Jefferson Co., N. Y. The common name is "Walking Stick," as the insect looks much like a twig with long legs to it. It is figured in Harris' Insects, under the name of *Spectrum formatorum*. It lives on young shoots, but is never abundant enough to do much harm.

Clover Gone Crazy.—A lady in Pittsfield, Mass., sends us a set of clover leaves having respectively from four to nine divisions. The "nine-leaved" clover is almost like a green flower.

Hygro-bareometer.—"W. A. K." Middleburgh, Conn. We have not seen the instrument referred to, and cannot give an opinion.

A "Horned" Caterpillar.—Several have sent specimens of a large green caterpillar with long horns or spines on the fore part of its body. These spines are orange colored with black tips. This is the larva of the Royal Walnut Moth, *Ceratoecampa regalis*, which feeds on the Walnut, Ash, and Persimmon. The moth is 5 or 6 inches across, of dull colors, and not showy.

The Plantain Pest.—"Montgomery" has a new place "on which the Plantain has taken forcible possession of what ought to be a lawn, and overgrown all the grass." It has tried hand weeding, but finds it slow and costly, and adds: "Nothing gives a home a more neglected appearance than their broad array of leaves, surmounted by thousands of seedy spikes, ready to dispute in the future every inch of ground." Hand weeding is the only remedy. If done when the plants are young it is not so much of a job. The lawn never should be so long without mowing as to allow any broad leaves or spikes to grow. A good lawn is not to be had without labor.

Succotash.—This dish is popular wherever it has been introduced. To make it of the best quality,

sweet corn should be used. To a dozen green ears, cut or scraped, add a quart of shelled Lima beans. Boil an hour. Season with sweet cream or butter, salt, pepper, a little nutmeg, and a tablespoonful of refined sugar. If the Lima beans are not to be had, Marrowfat or White Kidneys are a tolerable substitute. Lima beans can be dried green for this dish, and they are much better than those fully ripened. If succotash is made of dry materials in winter, more cream and sugar should be added.

"Night-blooming Cereus."—"J. S. B.," Ligonita, Pa. The flower sent is not the Night-blooming Cereus, *Cereus grandiflorus*. It was in such a state of decay, that no satisfactory examination could be made. But from the description of the plant it is more like the Peruvian Cereus (*C. Peruviana*), and it may be that species. The hints you speak of are young branches.

Coloring Carpet Warp.—A correspondent wishes to know the best way to color carpet warp of a tan color. Who will tell him?

Insects on Cherry and Pear Trees.—"G. G.," Egg Harbor City, N. J. The caterpillar is that of one of the Hag-moths, and was figured in October, 1864. It belongs to the genus *Linnaodes*, so named from the slug-like movements of the larva.... "C. M. B.," New Britain, Conn., sends another caterpillar, allied to the above, from a pear tree. We have never known them numerous enough to be troublesome.

Pears Cracking.—"L. L.," Portsmouth, N. H. We cannot tell you why pears crack. Some varieties will do it, and the best way is to graft the trees over with some sort known to succeed. The Flemish Beauty, which gives you so much trouble, is generally anything but a "beauty" in localities near the coast.

Horse-radish Grater.—Geo. A. McCoy? (no date.) You find a revolving grater, such as is used in the New York markets, figured in April, 1867. We cannot answer the question about conservatory, without knowing more definitely what is required.

Parasite on Nursery Stock.—"E. B. G.," Danville, N. Y. The vine on the pear stocks is a Dodder, or *Cuscuta*, too immature to determine. Please send another specimen in a paper box.

Basket Worms.—A number of correspondents have sent the leafy cases of the Basket or Drop-worm, which belong to the genus *Obolions*. The female does not leave the nest, but dies there after depositing her eggs. The only remedy is hand picking.

Worms in Pots.—"Mrs. W. G. B.," Fort Howard, Wis. We never knew fine water, properly made, to hurt any plant. The water should be perfectly clear—not milky or cloudy—when applied. Another way of getting rid of the worms is just before repotting the plants to allow the earth to get rather dry. The worms will congregate for the sake of mutual moisture, and will usually be found all together in a ball.

Apple Trees Dying.—J. Inger, Iowa, has decaying apple trees.—Insects, heat, cold, old age, overbearing, unsuitable soil, and external injury, are among the causes of decay in apple trees. The dead limbs should be removed at once. Scrape the bark and apply strong soponds to destroy insects. Cultivate the ground to give them a new start, top-dressing with lime.

Whitening Wool on Sheepskins.—Several subscribers wish to know how to whiten the wool on tanned pelts. Who will tell?

Copperas in the Garden.—"O. W." Sulphate of Iron is sometimes used in solution to destroy slugs and other pests. It has been recommended as an application to diseased pear trees, but we have no evidence of its utility. It is useful as a deodorizer.

Coal Tar.—"O. W." This cannot be ranked among the fertilizers, and will not make a soap with potash.

Steamed Food for Cows.—"L. P. D.," Lansingburgh, N. Y. It is pretty well settled that steaming food for cows pays milkmen very well. A Massachusetts farmer gives his opinion, as the result of five seasons' experience, that he can winter his cows on steamed food for one-third less expense than on dry feed, and get one-fourth more milk. Whether it will pay a farmer who keeps his cows dry in the winter to steam hay and meal is another question. But is it necessary to keep cows dry?

Autumn Leaves.—The leaves of our forest trees are so beautiful when they take on their varied autumnal tints that many have a desire to preserve them. Several letters have been sent asking for the method of treating the leaves in order to best preserve their colors. The subject was referred to a lady whose taste and skill in such matters is well known among her friends, and the following was received, which, as it came too late to go in the Household Department, is presented here: "Gather the leaves as soon as they begin to change color, as they then retain their bright hues longest and best. Medium and small leaves are most suitable for wreaths, pictures, and crosses; a few larger ones are desirable for leaf bouquets, fine sprays of tiny ones for that purpose being



highly prized. To dry the leaves use old periodicals, that have been stitched together, as they are smoother than folded newspapers and somewhat like them in texture. Any book of soft paper will do. Begin to place in the leaves at the end of the book, but not too close on a page. When one page is filled, turn over five or six, and continue in this manner through the book; then put it in a cool, dry place with a heavy weight upon it, as it is very essential to make them as smooth as possible. In one or two days another book will be needed into which to change the leaves. The first can be left open to dry, to be used again. In about a week the moisture will be extracted so that they can be placed in any book to remain until needed. I rarely work with mine under a month, to insure their being thoroughly dry. For all our leaves not pasted on paper we use boiled linseed oil, rubbing it on with a flannel rag, just enough to give a rich gloss. Keep the leaves spread out for a few days after oiling. For manilage, to paste leaves upon Bristol board, use two parts gum Arabic and one of sugar. When the wreaths or groups are pasted on, press them between books until smooth and dry, and then apply carefully, with a small brush, one or two coats of copal or white varnish. For wreaths, cut a circular piece from stiff paper of the size and width required, sew a piece of steel hoop around the back to keep it from warping, and add a loop at the top to hang up by. Then begin at the top, arrange and sew on small leaves, increasing the size as you near the bottom. When one half is covered, begin at the top again and make the other side in the same way, and finish with the most brilliant leaves. The oval is another form that we use. Hanging against a light wall they look very bright through the winter, and retain their beauties until June. Lamp-shades, ornamented with leaves, are something new, and very beautiful as well as useful. Cut six pieces like the pattern in the engraving, in perforated Bristol board. They should be $6\frac{1}{2}$ in. long, $5\frac{1}{2}$ in. wide at the bottom, and $3\frac{1}{2}$ in. at the top. Arrange a group of oiled leaves, flowers, or small ferns, on each piece—tacking them on very slightly; then line the back with white tissue paper, and cover the leaves with tulle or lace; bind around the edges of the pieces with narrow brown or crimson ribbon, and sew them together."

Superuberating is an awkward word that the English have invented to express what their potatoes have been doing in the hot and dry weather of the past season. J. Jenks, Wright Co., Minn., has sent us specimens of "superuberating" potatoes, and others have complained of "superuberation." Discarding big words, the trouble is this: The growth of the tuber is arrested by drought or other cause, and it ripens when only partly grown. If a season of growth follows after the tuber is so far mature that it cannot increase in size, the new growth manifests itself in branches, most frequently we see small tubers produced at the eyes of the large one, and sometimes, as in Mr. Jenks' case, the growth is

almost that of a perfectly ripe potato recently planted. Sprouts or stems are thrown off, together with some that are a compromise between an above ground stem and a tuber. This is not peculiar to any variety, and entirely depends upon those conditions which favor or retard a healthy growth of vines or tops.

Early Rose Potato.—From all the reports we have seen, this is one of the new things that have come up to the representations made in their behalf. When Mr. Hefron first made it public he claimed it to be ten days earlier than the Early Goodrich and a great deal better bearer. That a strong desire was felt on the part of growers for a first class early potato was shown by the readiness with which the Early Rose was taken up at an unprecedented high price. We have had a number of accounts of its prolific character and its excellence, and of these we give two extremes, Canada and New Jersey. J. H. Foster, Kirkwood, N. J., planted it with two other early sorts, and gives the following as the proportionate yield: Buckeye 7½, Early Goodrich 9, Early Rose 18. The estimated yield per acre was Early Rose 378, Early Goodrich 192, and Buckeye 181 bushels. John Warcup, in Canada, lat. 45° 30' min., gives the following: "May 9th, I had 1 lb. of Early Rose potatoes by mail from B. K. Bliss & Sons, for which I paid a dollar. The package of one pound contained five medium sized potatoes, which when cut into single eyes made 65 sets, which were planted ten inches apart in rows. May 28th they were mostly all up. They continued to grow, and maintained a deep glossy green foliage through all the very severe drought of the season. Aug. 15th the potatoes were dug, very ripe, skin red, and remarkably firm and russetty. The produce was 31½ lbs. May 9th, I planted also, with same treatment, one pound of one of our own favorite sorts. These came up several days later than the Early Rose, and gave a produce of only 11 lbs. with a much greater proportion of unmarketable potatoes. The Early Rose would have furnished good sized tubers for market very early, but our object being to ripen them, we let them all remain till thoroughly hardened." We have information from several quarters that unprincipled dealers sent out other varieties as Early Rose. Parties, in purchasing the Early Rose, or any other variety, should be sure and get their seed from reliable growers only.

Spots on Rose Leaves.—"A. W., Wythe Co., Va., sends some rose-leaves ruined by brown swollen blotches. The microscope shows the presence of some minute fungus, which has lived upon and destroyed the tissues of the leaves. The treatment of cases of this kind is yet but little understood. Good culture, to produce a vigorous plant, will help. Sulphur destroys one small fungus, that of mildew, and it would be worth while to try it on this. It should be freely sprinkled on the plants at the very first appearance of the trouble.

The Greeley Strawberry Prize.—Never were good intentions the cause of so much dissatisfaction as those of Mr. Greeley. The awarding of his grape prize was the horticultural sensation of the day—or rather of three years—and as it was awarded first one way and then another, it succeeded in making more trouble than is usually to be had for \$100. As to the strawberry prize, this was offered for a fruit that should have all the good characters of the Wilson and be of better quality. At the strawberry show of the American Institute some plants were entered for this premium, some in pots, others in tubs. Some were too late and others too early, and some had persistent advocates who would dog the committee at every corner. No committee with a shade of a conscience would award a premium which would almost revolutionize strawberry growing on such materials. They properly named the most promising kinds entered for the premium, and recommended that a committee be appointed to see the fruit another year and make a decision. We do not learn that any steps were taken this year towards awarding the prize. The whole matter yet remains where Mr. Greeley left it, in the hands of the American Institute. This brief statement, which we believe covers the whole case, is made to avoid answering any more letters in relation to the subject, as well as to place Mr. Greeley in the proper light. He is ready to pay over the premium whenever the Institute awards it, but he has nothing at all to do with the decision.

Transplanting Large Pear Trees.

"E. N. C., Cambridge City, Ind., wishes to know the best time to transplant pear trees 6 to 10 years old. Should prefer to do it in spring. The better way, if the trees are large, is to prepare them a year beforehand. Dig a circular trench, and cut off all the roots that extend too far to be readily removed. A mass of fibrous roots will form, and the shock of removal will be much lessened.

The Tomato Question.—Canada Experience.—J. Warcup, of La Prairie, gives among

other interesting garden memoranda the following experience with tomatoes: "I have tried Keyes' Early, Cedar Hill, Early York, and Tilden's. They were all cultivated alike; sown in moderate heat, March 23d, replanted in the bed May 2d, finally planted out June 10th. Keyes' began to ripen a week the earliest, Cedar Hill and York came next, and Tilden's, a very little later. Early York I shall discard on account of its roughness and want of attractive appearance. With respect to the comparative value of the three sorts, Keyes' is decidedly the earliest, of handsome shape, and very prolific. Cedar Hill, a little larger, fine form, abundantly prolific, very valuable. Tilden's has done finely, and ripened its large, beautiful fruit very satisfactorily, this season. The three kinds are all desirable and worth continuing."

Trouble with Arbor Vitæ.—"C. M. B." says that one of his trees is injured and dying; the stem is covered with a white substance and looks as if one had sifted meal over it.—If it is a woolly aphid, tobacco water will kill it; if a scale insect, as seems most likely, try hot water—water not quite boiling hot. If the tree is badly injured, dig it up and put in a new one, taking care that the new comer is not infested when planted.

Arbor Vitæ Seeds.—"H. W. L., Ham-monton, N. J. These ripen in the fall, and should be sown at once; if kept until spring they are apt to remain in the ground a year before they germinate. As the young plants will need shading, it is well to prepare a bed in a frame of boards; the soil should be light and rich, but no fresh manure must be added. If the soil is not naturally open and light, add sand. Do not cover deeply. The seeds may be sown in boxes of earth and kept in a cool cellar. They must not be too wet, but only just slightly moist.

Another Mole Trap.—Mr. H. Sharer, Cloud Co., Kansas, upon seeing the illustration of a Holland Mole trap, given last month, sends a sketch and account of one in use in Germany and Switzerland, which he finds very effective for moles and gophers. It requires fewer pieces than the other, and its construction will be understood from the engraving, which shows the arrangement in perspective, the dotted lines indicating the run. Dig an excavation about a foot square and a little deeper than the run. Make a ball of earth, stick a notched stick into it and push the ball into the run. A spring pole has a catch fastened to it by a string; bend the pole down and hold it by placing one end of the catch in the notch in the stick and thrusting its other end slightly into the bank. A cord is attached to the spring pole, one end of which is made into a slip-noose. This noose is placed across the run in an opening made by thrusting a spade into the ground. After the noose is placed, cover the opening with earth, to prevent the entrance of light. The slightest pressure on the ball of earth by the mole or gopher loosens the stick, liberates the spring pole, and draws the noose. Mr. S. is in doubt whether moles do more harm than good, but is sure that the



gopher does mischief. Our gardeners would soon decide against the mole. It plays havoc with lawns and strawberry beds, and seems to have a special liking for bulbs of all kinds. A friend of ours who is raising the rare lilies for sale was seriously damaged by the work of moles among his lily beds during the past season.

Caladium Seed.—"Will. S., Warrensburg, Mo. By 'Caladium' we presume you mean the plant with a tuberous root, and enormous leaves, which is often planted out for ornament, and which is now called *Calceola esculenta*. It is propagated by divisions of the root, and may be had of most florists. It is not raised from seed. The root may be stored through the winter in a cellar or any place that will keep potatoes well.

Michigan Wheat Premiums.—Good examples are contagious, and following closely after the Judd Wheat Prizes, offered this year through the N. Y. State Agric'l Soc., we have the liberal offer by Moore, Foote & Co., of Detroit, of \$400 in premiums to be awarded by the Michigan State Agric'l Society. The prizes are \$250, \$100, and \$50, for the best, second and third best five acres of White Wheat sown in the fall of 1897 and harvested in 1898, to be exhibited at the State Fair of 1899. Competitors must be members of the State Society. For conditions address R. F. Johnston, Secretary, Detroit.

The First Cast-iron Plow in America.—patented by Charles Nowbold in 1797, has recently been presented to the New York State Agricultural Society, by John Black of Mt. Holey, N. J. The plow consists of share, land side, sheath, and mould-board, and was all cast in one piece. The point was very soon broken and was never used afterward. The inventor spent about \$30,000 in perfecting and introducing his plow, and failed. A good idea is certain to win its way in the end.

Renovating Worn-out Soils.—"A. A. N." "What is the cheapest method of bringing up exhausted land?" In any climate where clover will flourish, this plant is undoubtedly the cheapest manure. If you can get a fair crop of clover to start with, your success is assured. This can be done in many cases by sowing two bushels of plaster to the acre. If this does not succeed, bone dust, Peruvian Guano, or fish scrap, in moderate quantities, certainly will. The clover may be turned in when a little past full bloom, or be partially fed by cattle that remain on the field, and plowed in later. Two or three crops will prepare the way for grain.

Peas as a Field Crop.—"D. G. H.," Princeton, N. J. We know of no good reason why peas should not be more generally raised in the northern States. They are a very common crop in Canada, and from thirty to forty bushels are grown to the acre, on good soil. They are much used in feeding swine and sheep, and make pork and mutton of the best quality.

Onions and Rotation.—"S. L. W.," Southport, Conn.—"Why do onions succeed without rotation?" It is by no means certain that onions are an exception to the general rule that rotations are beneficial. They succeed better than most other crops without rotation, because they have much more manure, and much more thorough working. The Brothers Wells, of Wellersfield, raise onions upon a piece of ground that has been in that crop for the last eighty years. They manure every year at the rate of thirty cart-loads to the acre. The surface soil is a foot deep. In the spring, as soon as the frost is out of the ground, they ensnail to the depth of two feet, and the crop is cultivated so often that no weeds are allowed to go to seed. The product is about 600 bushels to the acre in good seasons. If they could afford to raise some other crop in alternate years, it is quite possible they might get a larger yield of onions. If other crops had as much manure, and the annual subsoiling and thorough cultivation, they could be more frequently repeated. Rotation is valuable in its place, but not indispensable where a high-priced crop, like onions, demands high manuring and thorough working.

Good Farm Help.—"A. M. P.," Springfield, N. J.—"The difficulties of securing faithful service lie quite as much at the door of the landholder as of the laborer. If the farmer pursues the penny-wise policy of hiring for only a few weeks or months in summer, he cannot expect to find men waiting his wishes; or, if he find them, they will generally be idlers waiting for something to turn up. The true policy is to hire by the year. This gives the choice of the market, and good services."

Foremen—How to Get Places.—"S. D.," Toronto, G. W., asks the following questions: 1. Where can a competent foreman find employment? 2. How can he find it? 3. Where can he best improve himself as a farmer? A foreman, willing to work, as well as to direct labor, is always in demand at the opening of the year. The best market for such service is usually in the suburbs of cities and villages, at the country seats of gentlemen. The best way to find a place is to advertise. If a foreman wishes to study the science of agriculture he could spend a year or more very profitably at an agricultural college.

Ice-houses.—One twelve feet square is large enough for a common family, and will keep ice so that there will be plenty to spare. The house should be double walled, with a 10-inch space between the weather boarding and the plank lining, filled with dry sawdust, tan-bark, shavings, or some other similar loose material well packed down. There should be not the least chance for water

to stand, nor for air to circulate at the bottom. The ice should be laid upon an open floor, covered at least a foot thick with straw. A gentleman of our acquaintance first covers the floor with a layer of straw, then lays small bundles with two or three tight bands close all over, then covers these with a good layer of straw, on which goes the ice. The same person uses wheat chaff to fill in around the sides between the ice and the walls, and to cover the ice with. If there be enough chaff, neither straw nor sawdust need be used to pack around or cover the mass of ice. There should be double doors in the gable end, and sufficient ventilation to secure a change of air, and prevent that close, damp, warm atmosphere which is often perceived in unventilated ice-houses, and which is the cause of rapid thawing and loss of ice.

A Prairie Ice-house.—Make a platform of rails close to a big dry straw heap, cover it a foot deep with straw; set crotched poles, and make a shed with rails, covering it with straw enough to protect it from the weather. Pack the ice in a circle 12 feet in diameter, and build the pile 8 feet high, very close and snug; then pack it all around with straw, doing it slowly and thoroughly, and finally cover it with 6 or 8 feet of straw on all sides. Such a stack will keep ice well.

Cheap Lands at the East.—"E. T.," N. Y. We refer you to April *Agriculturist*, page 127. The best way is to visit the districts indicated, see the cheap lands, and judge of them yourself.

Cotton Seed Meal for Hogs and Horses.—Sears Atwood.—"We have never used cotton seed meal for feeding horses, but would not hesitate to try it, beginning with small quantities, and feeding it with other provender. Hogs do well upon it, we believe, fed a pound or two a day."

Obstruction in Tile Drains.—B. Dale, Cayuga County. It is generally quite easy to detect the point of obstruction, by the wet appearance of the soil above. The most frequent cause of obstruction in well laid drains is the intrusion of the roots of trees. The remedy is to remove the trees, or to sink the drains.

Spent Tan-bark.—S. G. Perry, Carroll Co., O. The bark contains usually a larger percentage of ashes than any other portion of the plant, and hence is a valuable addition to any soil. Your great heap of old, well-rotted tan-bark would doubtless be serviceable, on either plowed or grass land, as a top-dressing or plowed under, and it would be good also in a compost heap. It might be worth while to use such portion as is dry as an absorbent in the stable.

To Dealers—Last Time of Asking. Will those seedsmen, dealers in implements, stock, trees, —is short, any agricultural or horticultural matters whatever—who wish their names to appear in our *ANNUAL*, please send their business cards or catalogues at once!

Keeping Over Old Hay.—"R. F. B.," Litchfield County. If old hay is well stacked, or in the barn, it is worth about as much the second year as the first. It is a good plan to keep over a few stacks to meet the emergency of a short hay crop. It is a poor plan to buy hay when it bears the highest price. The most thrifty farmers have hay to sell in these years of short grass crops, and the extra price pays very well for keeping.

"The Crack Shot" is the title of a very neat volume by Edward C. Barker as a guide to young riflemen in the use of the rifle. The subject is pleasantly and thoroughly treated, a free use being made of engravings in explaining the principles involved in the use of this implement. The chapters on American and European breechloaders are full, and well illustrated with pictures and sectional views of the arms. The volume contains 340 duodecimo pages, and is published by W. A. Townsend & Adams.

What is the Difference between a Horse-hoe and a Cultivator?—These terms are often used indiscriminately. We have known an agricultural society to award a premium one year to an implement as the best cultivator and the next year to the same implement as the best horse-hoe. It would be well, perhaps, to confine the term cultivator to implements used for cultivating the soil previous to sowing the seed, and horse-hoe to implements used for cultivating between the rows of growing plants.

What Missouri Wants.—"W. B. J.," writes: "We want more enterprising men to buy up and

improve our surplus lands, that can be had at a very low price. Missouri has a good variety of soil, well adapted to the culture of all kinds of produce. Wide and rich bottoms can be had at from \$5 to \$50 per acre, extended prairies from \$1.25 to \$50 per acre, according to improvements, and ridge, bill, and bluff land can be had for just what a man will please to give. Land is owned in large tracts of 80 to 4,000 acres, and will have to be bought up by companies. We have some fine sheep and want more, and we want machines and factories to manufacture our wool to save double expense, first of shipping the wool East and then sending the cloth West. We have paid high prices for our sheep, and now we are worse off than if we did not have any, as we cannot get the wool carded, and cannot get any more for our fine wool than for the wool of our coarse woolled sheep. We have been humbugged enough; we want to improve our country and to show to the world that Missouri is one of the best States in the Union for all branches of business. Crops are good this year and fruit abundant. This hot or next spring will be a good time to emigrate. Montgomery and Callaway counties I can recommend. Come and see us, and bring along your machines."

Nebraska Lands.—The following comes from an "old subscriber" in Nebraska. Correspondents often ask about Western lands, and where they can get information concerning them. We give this as we may give others of similar character, to indicate a channel through which inquiry may be made, with the distinct understanding that while we have no reason to doubt the statements, we are in no way responsible for them.—Ems. "I feel that I shall benefit many of your moving readers by suggesting that they post themselves in regard to Nebraska, south of the Platte River. There is plenty of good government land yet to be had in places, and it is one of the best farming States in the Union. After a week's ride, I can say I never saw so much fine, rich, and good rolling land, and I had the pleasure of meeting with some parties who are forming a colony to settle on government land, and cooperate in all the expensive items incident to new country farming, such as implements, machinery, fencing, hedging, pasturing, herding, prairie breaking, schools, etc. To my mind such an opportunity seldom occurs to settle on government land, at government prices and terms, and be surrounded with so many of the elements of an old settlement. Your readers can post themselves by calling on or addressing Mr. E. J. Husac, care B. M. Daveport, Nebraska City, Nebraska."

Advice to a Novice in Farming.—"Etna" writes: "What part of the Union would you advise a young mechanic to go to, to commence farming? How much capital ought he to have? What kind of land ought he to buy? What kind of tools ought he to have to make a good living? In fact, how ought a novice to get into the business?" This is given as a specimen of many letters of similar purport. They are exceedingly unsatisfactory to answer, as we are sure the advice will be contrary to the wishes of the writer. We long ago learned that it was a thankless task to advise one against his inclinations. Our correspondent, who is quite unknown to us, will hardly like it if we tell him if he is so much of a novice that he does not know what tools he will need, that he had better not invest his capital in farming, and need not yet trouble himself about the parts of the Union. The best investment he can make is to hire himself out to some thorough-going farmer for at least a year. He would probably earn something, but it would be better to give the work of a year for the instruction received than to start as a green hand. If he does not believe this is so, let him ask himself if he can take care of horses and cattle? Can he hitch up a team or yoke a pair of oxen? Can he milk, cut down a tree, plow, harrow, mow, cradle, or thrash? Can he split rails, lay a stone wall, use a hoe—in short, do the many things that are necessary to be done on a farm? We would encourage young mechanics who wish to try farming, but would no more advise them to go into it without some previous knowledge than we would advise a farmer to take up a mechanical business without first learning the use of tools. If our young friend has made up his mind to be a farmer, as we hope he has, he will let no slight obstacle deter him. The way may be much smoothed by the course we have indicated, and much useless expense avoided.

Tanning Skins.—An old trapper gives the following process for tanning skins with the fur on. Take two parts each of alum and salt, and one part saltpeter, all well pulverized. When the flesh side of the skin has been cleaned of fatty and other adhering matter, sprinkle it freely, enough to make it white, with the mixture. Fold in the edges and roll up the skin. Let it remain for three or four days; then wash, first with clear water and then with soap and water. It should be pulled in various directions as it is drying, to make it soft and pliable.

The Number of Feet, Board Measure, in a Log.—An old lumberman gives us the following rule for ascertaining the number of feet in a round log. It is not absolutely accurate, but near enough for practical purposes: "Take off 4 inches for slab; then square half the diameter, and on a 12-foot log multiply by 3, on a 14-foot log by 3½, and on a 16-foot log by 4, etc." Thus, suppose you have a log 12 feet long and 24 inches in diameter: Deducting 4 inches for slab, leaves 20 inches. Square half the diameter $10 \times 10 = 100$ feet. Multiply by 3, $300 \times 3 = 900$ feet. If the log is 14 feet, multiply by 3½ = 950 feet; if 16 feet, multiply by 4 = 400 feet. If the log is 36 inches in diameter and 12 feet long it would contain 768 feet, board measure. Thus $36 \div 4 = 9$. Square the half, $9 \times 9 = 81$. $81 \times 9 = 729$.

Turning in Clover for Wheat.—"O. A.," Harrisonville, O., asks: "Will clover plowed under while in full bloom be sufficiently rotted by the last of August or first of September to bring to the surface as a preparation for wheat? In what way would you plow it under, to what depth, and with what plow?" Clover turned under in full bloom is full of sap, and very soon disappears in the soil. Nothing of it would be left by the end of summer to hinder the plow or harrow. The proper depth to plow will depend a good deal upon the character of the surface and sub-soil, and the quantity of manure to be used. We always like to air an inch or two of the subsoil. In turning under clover, say six or eight inches deep, we should not bring it to the surface again in cross plowing for wheat. Any good soil plow will turn in clover, and if the plow clogs, it can be remedied by heavy chains fastened to the end of the beam and to the lower part of the right plow handle. The best farmers of some sections often feed off the bulk of their clover before plowing. They claim that the manure left upon the field by the cattle is worth nearly as much as if the whole clover were turned in, while they gain the pasturage.

Muck Deposit.—"W. W.," Burlington, Vt. A. "I have an accumulation of vegetable matter, made by a spring running over a flat, causing weeds and grass to grow and rot. What is the best way to use it as a fertilizer?" It can be used in a variety of ways to good advantage. 1. As an absorbent in barn-yards, stables, sties, and privies. 2. For composting with stable manure, three loads of the mould to one of manure, upon the ground where it will be wanted next spring. 3. For composting with lime or with ashes. 4. For spreading upon light sandy or gravelly soils as a top-dressing for grass, or to be plowed in for hoed crops. For any of these purposes it will be better to draw it out upon dry land and expose it to the frosts of one winter.

Bone Mill.—"D. B. Sebold, N. J." If you have a bone mill that will grind twenty tons a week, that will go by horse or water power, and that you can sell for \$300, you will do well to put it in the market at once. We know of no mill suitable for this work that can be made for twice this sum. Hundreds of farmers would be glad to own such a mill if they could afford it. They can get bones cheap in the villages, but the trouble is in reducing them. The mill would sell well if advertised.

Distributing Manure in Pastures.—"C. T. S.," Richfield. "My sheep and cattle drop most of their manure near the gate where they lie at night. Is there any remedy?" The sheep can be managed by putting them in pens at night in different parts of the field. The cattle will change their place of rest by salting them in various parts of the pasture. A little extra feed frequently offered will draw them to almost any required spot, if it is dry. It is very desirable to have the manure as evenly distributed as possible.

Poultry Breeding In and In.—"B. H.," Jamaica, L. I. This practice is carefully avoided by the best poultry men. Fowls of the same parentage should not be sold for the purpose of breeding together. The cocks should be changed every spring.

Roots.—"L. L. G.," Bordentown, N. J. We are not aware that the root has ever been brought to this country. The roots are highly prized by British farmers for the protection they afford to their fields. They live largely upon larvae dug from among the roots of grass, and only plunder the grain fields when forced by hunger. The Mark Lane Express says in a recent number: "The experiment has been tried to destroy or banish these birds, but it has always been a cause of bitter regret, for the immense increase of the insect tribes that followed their absence inflicted more injury than the roots themselves would have done. Such is the case at this very moment in France, where, owing to the war waged against these birds, the communes are paying for the

destruction of the cockchafers, which in myriads are ravaging the fields and woods." We have a great excess of insects in all the older parts of this country, owing no doubt mainly to the wanton destruction of our birds by amateur sportsmen. Insect depredators are among the worst enemies the farmer and fruit grower have to contend with, and we need a great increase of birds to keep them in check. The birds are easily kept within bounds, but the insects are too mighty for man. Literally he is "crushed before the moth."

Cutting Corn by the Roots.—"J. G.," Morristown, N. J. This practice has been steadily gaining for the last twenty years, and this is one of the best tests of its economy. The grain is heavier than when the stalks are cut as in the old method; the labor is much less; the fodder, taken as a whole, is more valuable. If cut as soon as the corn is glazed, the whole stalk will be eaten when chaffed. It is highly prized by milkmen, and many consider it equal to the best upland hay for producing milk.

Lima Beans and Corn.—"F. H.," Lynn, Mass. Limas may be shelled when of a size fit for cooking and dried. They are to be soaked overnight when used. Those that approach maturity are better allowed to ripen. If you can afford to use them, considering the high price they bring as seed, try some pork and beans made with Limas. It is the old Yankee standard dish glorified.—Or, boil until tender and fry brown in butter. Sweet corn has been fully discussed in past months in the household columns.

The Cultivation of Sorghum.—"F. H. C.," Ludlow, Mass. "Does the Sorghum crop pay?" The cultivation of this crop made rapid progress during the war, on account of the high prices of sugar and molasses. It has probably gained a permanent foothold in the northern States, especially in the West, as a paying farm crop. Large quantities of syrup are made, which find a ready home market. The general impression is that the crop this year is a small one, but the Sorgho Journal claims that the quantity planted the present season is much greater than the last, though not quite equal to that of 1896. The crop falls frequently through poor seed, and those who save their own seed should be careful to guard it against frost. The seed may be gathered before it is fully mature, and if kept from frost, and thoroughly dried, it will vegetate much better than that which is frosted, and afterwards ripens upon the stalk.

Early Rose Potato-Premiums.—In another item will be found some account of the success of the Early Rose Potato. Since that was in type we have had abundant testimony from others, all of the same purport. In view of the great interest felt in this variety, the publishers have placed it upon the list of premiums, upon terms which will enable those who desire to make a trial of this remarkable potato to do so, with a very little effort expended in procuring subscribers for the *Agriculturist*.—See Premium Lists.

The New England Fair.—The Great Fair and Cattle Show of the New England Agricultural Society occurred the first week in September. The show of neat stock was magnificent, the best herds of each prominent breed being well represented. There was also competition enough to excite interest, and the decisions of the judges, though made with no little perplexity in some cases, met with general approval. No doubt mistakes were made, but on the whole, so far as we are aware, all went smoothly and pleasantly. It was, moreover, a very even show, each breed, Short-horns, Devons, Ayrshires, and Jerseys, being from several exhibitors, and most of the animals of marked excellence. The great Dutch breed (in color, spotted black and white, in size excelling the largest Short-horns, and in coarseness rivaling a post and rail fence, great feeders and great milkers) were a novelty to most spectators, and attracted much attention. The show of working oxen, usually the conspicuous feature of Connecticut fairs, was not large, but it was very fine, some of the best pairs and "strings" coming from other States. Mutton sheep were the great attraction of the small-cattle department, but some of the 400-pound Cotswold can hardly come under this designation. This breed was shown in large numbers, and of a quality we have never seen equalled. There were some good Southdowns, but the average was low, and Merinos were there with wrinkles and crease enough to have satisfied even a Hammond. The show of swine was unworthy of the Society, and a pair of Windsor Suffolks were all we remember as above mediocrity. A single exhibitor from New Haven redeemed the poultry show from utter failure, and his collection was excellent and instructive. The important feature of the horse show, and one which should be everywhere encouraged, was the exhibition of stallions with their progeny. The high-bred trotting

stallion "Ashland" was shown, with, we should judge, a score or more of his colts and fillies of all ages from four or five years old to yearlings, showing a very strong family likeness. There were an unusual number of fine breeding horses shown, among them some noble thoroughbred mares. The Implement Department was not very extensive, but literally filled with meritorious articles. There have been great improvements in horse-rakes. An invention applicable to all mowing machines enables the driver to lift the cutter bar quickly and easily with his foot, without using his hand. We noticed an admirable safety whiffletree trace hook, several good hay tedders, and one of them possibly good, and, if so, very cheap and handy; and a self-loading "rigging" for hay wagons, which we think will work. This will, with a man to tend it upon the ground, pitch on its own hay faster than two men can possibly take care of it on the load. A reversible plow upon a new principle, for use upon level land, struck us as very good. Two shares and mould boards are fitted upon one large plate which is the standard for both, and this is easily turned over the iron beam, and thus the implement becomes either a right or left-hand plow. In the Household Department there were many interesting things also. The New Haven carriage makers made a grand display, but not particularly agricultural. Fruits and vegetables were a meagre show—the only interesting article to us being the new grape "Eumelan," shown for the first time. The floral show was in one of the fine halls of the city, and was most admirable. The walls were hung with pictures of great excellence, chiefly landscape, and the sides and center of the halls were filled with choice flowers, bouquets, foliage plants, ferns, etc., of rare beauty, in great profusion, and tastefully arranged.

There is usually complaint at such gatherings, and some gambling is expected, often justifiable and frequently not, but on this occasion there was the most obvious mismanagement on the part of the chief officers of the Society. In the first place, the Society had apparently sold itself out to a jockey club and turned its meeting into a horse race, with an agricultural attachment. The President tried weakly to give dignity to the agricultural part. In his great pavilion he maintained a solitary majesty, his tables being occupied by a few reporters who escaped from the jinx of the race course for quiet. The show of vegetables and fruits was, as we have said, very meagre. We heard of exhibitors in this department who were turned away because their contributions were judged insufficient to give them admission, though competing for the published prizes. The grounds were occupied in some of the most conspicuous places by side shows of fat women, learned pigs, and all sorts of monstrosities. Spirits were sold freely, and the accompaniments of a race-course bar, drunkenness, profanity, and noisy rivalry, were thrust before the refined and decorous parties of city and country men and women, lads and lasses, who came to the show. Here, too, was the open sale of "racing pools" at auction. Pool selling is regarded as the very worst form of horse-race gambling, and it is a burning disgrace to the officers of the N. E. Ag'l. Society that they allowed it. If this is the Boston way of managing a Society of this kind, it is high time there was a change. These associations are not such as the wives, daughters, and sons of New England farmers should be accustomed to.

Fitting for the Nursery Business.

"D. K. M.," Magnolia, (no State) says: "I wish to fit myself for the nursery business; please inform me what books I had better read." Reading will be a good preparation to enable one to learn the business intelligently. Barry's Fruit Garden, Warler's Pomology, Fuller's Small Fruit Cultivist, Thomas' American Fruit Cultivist, Hoopes' Evergreens, and Fuller and Mohr on the Grapes, all contain much that would be a great help to a beginner. We assume that of course Mr. M. intends to learn the practice with some competent nurseryman.

Gas Lime.

"A. N.," Nashua, N. H. This article is to be used with caution, as it contains deleterious matters with the ammonia and gypsum, which are useful. It may be spread upon mowing or pasture land, at the rate of three tons to the acre, with good effects upon the subsequent crop. At the rate of eight tons to the acre it kills vegetation. It might be used to eradicate weeds in very foul land, and in walks.

Farmers' Clubs.

"G. N. T.," Nicholson, Pa., asks: "Can you tell us how these clubs are organized and managed?" The less machinery you have about them, the better. Meet around at the farmers' houses, if there is no better place, appoint a chairman for the meeting, and a secretary for a longer time, three months or a year, propose a subject for discussion, and let each man give his experience and ask his questions. The more familiar the meetings can be made, the better. A dozen farmers meeting once a fortnight, for discussion and to inspect stock, crops, and buildings, could not fail to help one another to be better farmers and housekeepers.

The Department of Agriculture.

"F. B. W." asks us to advise our readers to petition Congress to abolish the Department of Agriculture. Not yet, Mr. W. The present Commissioner is quite desirous of working for the good of farmers, if they will through their associations indicate what they would have him to do. He had not been long in place before he discharged a lot of nobodies and shut up the seed-shop, for which he deserves much credit. The only charge our correspondent makes against the Department, is that the publications are expensive and are unequally distributed. The reports are readily accessible to every farmer, as all Agricultural Societies can have them, and every farmer should be a member of such an organization. The sum appropriated to the Department is not large, and we do not deem its abolishment demanded on the score of economy. The promptness with which the Commissioner took steps to have the Texas cattle disease investigated shows that he intends to work for the farming interest.

American Hay in England.

Owing to the extreme drought, hay is very scarce and high in England, and some of our enterprising merchants have sent over a considerable number of bales from this country. Should there be no prejudice against American hay, and should it command the same price as the English article, there can be no doubt that with the present premium on gold, hay would be sent in large quantities with considerable profit to the shippers. The subject has attracted considerable attention, and the most extravagant statements have been made in regard to the effect it would have on the price of our hay crop. It is doubtful whether the anticipation of extreme high prices will be realized. One of our foreign exchanges notices the sale by auction at Liverpool of foreign-grown hay. It says: "The imports from Belgium realized from £5 13s. to £6 per ton, whilst those from the United States sold at from £4 10s. to £5 10s. On the same occasion English-grown was purchased at £7 per ton." Reckoning seven dollars to the pound, English hay is worth \$49 per ton, and American hay \$31.50 to \$35.50 per ton, say an average of \$33 per ton,—a difference of \$14 per ton in favor of English hay. Those who have based their calculations thereon on the price of English hay are likely to be disappointed. The Irish Farmers' Gazette obtained samples of the hay, and says: "The Belgian hay seems to be fully equal to the English sample, but decidedly inferior to a well saved specimen of Irish hay with which we compared it. The American hay is extremely coarse—more like dried rushea than the produce of a meadow. One specimen is very inferior, and is certainly not equal in feeding value to good oat straw. If the Americans can send us better hay we need not apprehend much serious competition from them in the matter of fodder." We can hardly believe that those engaged in this business could have committed the folly of sending an inferior article. It is more probable that good Timothy hay was sent, and those acquainted with English meadow hay can easily understand how coarse it would appear in comparison. If there is any reluctance to be placed on the analyses which have been made, Timothy is the most nutritious of all grasses, and we should be surprised if the English horses do not pronounce a different verdict from that of the Farmers' Gazette. We understand that the hay has been submitted to chemical analysis, and we shall know more about it in a few weeks.

The Importance of Selecting Good Cattle for Fattening in Winter.

In a paper on Stall-feeding read before the Limerick Farmers' Club, by Mr. E. L. Hunt, he said: "We often hear that stall-feeding does not pay, but if you only saw the description of cattle that those farmers try to fatten, you would not be surprised that they find the speculation a losing one. I am of opinion that the great question of profit or loss is generally decided the day the selection is made of the beasts intended for fattening; also the condition they are in when tied up. The proper time for doing so is the end of October, or early in November. Care must be taken to have them all housed before the wet or cold weather tells on them.—There can be no doubt of the importance of paying great attention to the kind of cattle intended for fattening. The neglect of this is one reason why farmers think that if an animal is allowed a liberal allowance of hay and meal, it will soon 'cut its head off.' With a well-bred grade Short-horn or Devon, the result would be very different.

Winter Fallows.

The object of summer-fallowing land is—1st, To clean it; 2d, To give it rest; and 3d, To enrich it. It is unnecessary to say anything on the first point. We all understand why and how summer-fallowing cleans land;

but we may not have as clear ideas of the advantages of allowing it to rest. The growth and removal of plants necessarily impoverish the soil. Stopping plants from growing by continually stirring the land prevents this exhaustion, but it is equally true that land rests when allowed to remain in nature, and all the grass which grows is returned to it in the droppings of the animals. Strictly speaking, therefore, the real object of a summer fallow is to clean the land and to enrich it. Pulverizing the soil and exposing the particles to the atmosphere decomposes the organic matter and disintegrates the mineral matter, and thus renders available a certain quantity of plant-food, which before lay inert and unavailable.

The old-fashioned system of summer-fallowing is now seldom practiced in this country or in Europe; but in England, on the heavy lands, the "bean fallow," and on the light lands a turnip fallow have taken its place. In this country there are a few farmers who still plow their land three times in summer-fallowing for wheat, but of late years nearly all our summer fallows are plowed but once—say in June or July—and all that is afterwards done is to keep the surface clean by the use of the cultivator, etc.

Our present object is not to advocate or reprobate this system, but we can see no reason why a winter fallow will not do nearly or quite as much good as such a summer fallow. If the land was plowed early in the fall, many weeds would start, and could be destroyed by the use of the cultivator before winter sets in, or at all events they would be killed by a second plowing in the spring. We do not see, however, why land that is plowed in September or even the first of October could not be again plowed should the weather permit, the latter part of November or often in December. It would then lie up rough and exposed to the ameliorating effects of the frost.

In England, farmers appreciate a severe frost in making the land "turn up" better in the spring. Here, in the Northern and Eastern States at least, we are always sure of cold sufficient to freeze the soil, and it is evident that but few farmers avail themselves of the effect of frost in disintegrating and mellowing their arable land. If they did, winter fallows would be more common.

Cider Making.

Portable cider-mills that can be worked by hand are very convenient and useful, when there are but few cider-apples to be worked up. It often happens that a farmer has a few bushels of apples that will not keep till the time of making the main crop into cider, and in this case a portable cider-mill will enable him to use them to advantage; but when there are several hundred bushels of apples ready at one time, the old-fashioned custom of taking a load of apples and straw to the nearest cider-mill is the pleasanter, and we believe the more profitable plan. It is a kind of holiday for the boys. The apples are allowed to hang on the tree as long as the wind and frostynights will let them. The riper they are, the better the cider. They are picked up and placed in a large heap, either in the orchard or at the cider-mill, and are allowed to lie a few days to complete the ripening process, in which the starch is converted into sugar. They are then rasped or ground into pulp. If the weather is cool and the apples not quite ripe, it is better to let the pulp remain in the vat a few days before pressing out the juice. This gives the cider a higher color, makes it sweeter, and of better flavor. The process of pressing is simple, but requires some skill. Four boards about six inches wide are nailed together in a square, the size it is desired to make the cheese, say from four to five feet. This is placed on the bottom of the press, and a little clean rye or wheat straw, pulled out straight into bundles, is put inside with the ends extending about a foot all around. The pulp is then put into this rim forming a layer about six inches thick; the straw is then turned on it, and a little pulp placed on the straw to keep it down. The rim is then lifted and a stick is placed at each corner on the layer of pulp for the rim to rest on; some more straw is then placed all around, and another layer of pulp added and the straw turned over it as before. This process is repeated until the cheese is as large as desired, using say from seventy-five to a hundred bushels of apples.

The cider will commence to flow at once, and it is better to let the cheese settle down somewhat before turning the screw. If pressed too much at first, the pulp may burst out at the sides. The cheese is generally allowed to remain under the press all night, and before leaving in the evening, the screw is turned as tight as possible. In the morning additional pressure is given, and when the cider has ceased to flow, the screw is turned back, the board is cut off, and the corners of the cheese are cut off with a bay-knife and the pomace laid on the top. The pressure is again applied, and the cider will flow freely. As soon as it ceases, remove the pressure and cut off four or five inches of pomace from the sides of the cheese, place it on top, and apply the pressure again as long as the cider will flow. Eight bushels of good apples will

make a barrel of cider. The cider is usually put in barrels at once and sold while sweet.

Strictly speaking, we suppose the sweet juice of the apple is not cider, any more than the sweet juice of the grape is wine. It is converted into cider by fermentation. Those who prefer sweet cider resort to various methods for arresting this process, such as putting a handful of powdered clay into each barrel, or two or three pounds of well-burned charcoal. Others add a little mustard seed. Sometimes a few gallons of cider are placed in the barrel, and then a rag dipped in brimstone is attached to a long tapering bung; this is ignited and the bung loosely inserted. After the brimstone is consumed, the barrel is rolled until the cider has absorbed the sulphurous acid gas. The barrel is then filled up with cider. The sulphurous acid gas acting on the albuminous matter in the cider arrests fermentation. The objection to this method is that if too much gas is absorbed, it may prove unpleasant if not injurious. To obviate this, sulphite of lime is now used, which has the property of checking fermentation. We have tasted cider preserved in this way that was excellent, and we have also tasted some that was execrable. It is not an easy matter to keep cider sweet and pure for any length of time, especially if the weather is warm. If the cider is not made until just before winter sets in, and can afterwards be kept at or near the freezing point, it will remain sweet and excellent.

To make good fermented cider that will keep a year or more without turning too sour to be used for anything but vinegar is not a difficult matter. The first thing is to exclude all decayed fruit, but it should be quite ripe. Not a drop of water should be used in the process of manufacture. The sweeter the juice, the stronger the cider, and the better it will keep. Put the barrel immediately in a cool cellar—the cooler the better. The fermentation may go on slowly or rapidly, practice differing in this respect. In the former case the liquid is treated in all respects like wine. The cask has a bung in which is fixed air-tight a tin tube bent at right angles, or a piece of India-rubber tube. The free end of the tube in either case dips into a vessel of water. This arrangement allows the gases liberated in fermentation to pass out, and the end of the tube being covered with water, air cannot pass in. The bubbling of the gas through the water shows how the fermentation is progressing. When this has ceased, the cider is racked off into clean casks, which are to be full and bunged tightly. The following treatment is communicated by an English friend, which he assures us is attended with good results. Most readers would probably prefer their cider and beefsteak separate.

"Put into the barrel of cider five or six pounds of loaf sugar, and a pound of raw, lean beefsteak. Let the bung be open; keep the barrel full, so that, as fermentation takes place, the scum thrown to the surface may run off through the bung. Some cider should be reserved to be added every day or so, to supply the waste of fermentation. When all the scum is thus worked off, bung up the barrel tightly and place a few handfuls of wet sand on the bung, pressed firmly to exclude the air."

Seeding with Weeds.

Cleanness of the soil depends more upon the treatment which cultivated crops receive in the latter part of the summer, than upon any thing else. Foul land is one of the great evils of our system of farming. It not only greatly increases the expense of cultivation, and diminishes the crops, but it gives us foul grain and grass seeds, and thus the evil is perpetuated. It is easy to keep Indian corn and all the larger seeds clean, but it is almost impossible to get grass seed clean by any other process than clean cultivation, while the land is under the plow. Whatever grows in the meadow is cut with the grass, and the seeds are hopelessly mixed. Much of the grain that is sold for seeding has chaff or other foul stuff in it, and nothing is more common than to find daisies or white weed, dock and thistles, mixed in with the timothy, red top, and clover that we buy at the stores for pure seed. Such sales are a fraud upon the public, whether the man who raises the seed designs it or not. Few farmers have the means of detecting the cheat until the weeds come up, and bloom with the grasses in their meadows. Then it is quite manifest that "an enemy hath done this"; and he is none the less an enemy because he bore his neighbor no personal ill will. It is a sad sight in riding through the country to see so

many plants out of place, and so very few meadows and pastures producing grass only. Even upon the virgin soils of the West, recently reclaimed from the forest, or the prairie, it is astonishing to see the rank growth of weeds. Their diminishing wheat crops are owing quite as much to the presence of these weeds in the stubble, as to the loss of fertility in the soil, or to the changing seasons. There are few farmers who do not indirectly pay a heavier tax to weeds than to the government. We insist, then, upon absolute clean tillage all through dog days, as the only economy. We have no doubt that the extra cultivation required will be paid for in the extra yield of corn, and in all the root crops, except potatoes. This crop, fortunately, is not injured by early lifting, and as soon as dug, a clean sweep should be made of the weeds. If green, they can be turned under, and add to the riches of the soil. If ripe, burn them.

How Muck and its Composts Help the Soil.

In our last issue we noticed some of the methods of composting muck and peat and of preparing them for fertilizers. We now point out some of the ways in which they benefit the soil. They add a large mass of organic matter directly to growing plants, and supply their wants. These peat swamps are the sepulchres of dead plants, containing most of the elements of our cultivated crops. Composting puts this organic matter in a condition to be used. An analysis shows that peat contains nearly the same elements as cow dung. All our hard-cropped fields in the older States need this vegetable matter. It is especially valuable upon sandy and gravelly loams, and if we add it in large quantities enough we can turn a barren sand into a fertile field. Astonishing results are shown from the application of these composts to thin, hungry soils. They are largely made up of carbon, and their decay in the soil furnishes carbonic acid gas, both to the roots of plants and to their leaves. The great luxuriance of crops upon drained swamps and fresh clearings is due mainly to the abundant supply of this gas, furnished by decaying vegetable matter. In all cultivated lands the carbon in the soil is steadily wasting by the removal of the crops, and it must be restored or the land will not pay for cultivating. But peat contains nitrogen in considerable quantities, which furnishes to plants nitric acid and ammonia, the most costly elements in all fertilizers. The average amount of nitrogen found in the thirty samples of peat analyzed by Professor Johnson for the Connecticut State Agricultural Society was $1\frac{1}{2}$ per cent of the air-dried substance, or more than three times the quantity usually found in stable or yard manure. When the peat is weathered and composted and distributed in the soil, this nitrogen furnishes ammonia to plants, like other nitrogenous fertilizers. A ton of sun-dried peat, according to the estimate of the Professor, contains thirty pounds of nitrogen, equivalent to thirty-six pounds of ammonia, worth, at twenty cents a pound, \$7.20 a ton. This may not be all available for plants the first season, but it is so much plant food stored away in the soil, certain to be wanted in due time. It is as really money to the farmer as the nitrogen which he puts into the soil in yard manure and Peruvian guano. There is also an incidental benefit from the free use of muck compost too often overlooked. It enables the soil to appropriate the free nitrogen of the air. This is oxidized in the pores of the

soil to nitric acid, and thus the farmer's crops are daily dressed with the most costly of all fertilizers. The inorganic elements of peat are also valuable. The ashes have considerable quantities of lime and sulphuric acid, and magnesia, phosphoric acid, potash, and soda in less amount. These are worth as much as the same elements furnished in other manures.

Besides the plant food which is furnished directly by the peat, it helps the soil in other ways. It absorbs water, and holds it like a sponge for a long time. This property of peat makes it exceedingly valuable for thin, sandy, and gravelly lands. These lands are said to be leachy, from the well-known fact that manures do not benefit them much after the first season. But the escape of the valuable properties of the manure is into the air rather than into the earth, because there is not vegetable matter enough in the soil to retain them. It is of great value to dress these lands heavily with peat composts. They hold moisture much better to guard them against drought, and they retain the ammonia furnished by other manures. So many and important are the benefits of peat that every farmer who has bogs ought to ascertain their quality and spend money freely in making composts. Very often they are the cheapest means of enriching the farm and making it pay large dividends.

What to Do with the Sheep.

While good, fat sheep still command fair prices, poor, inferior ones can hardly be given away. During the past month such sheep have sold in Albany, and even in New York, at from \$1.25 to \$1.50 per head, and at Pittsburg and other interior markets, whole lots have been disposed of at 50 cents apiece. At the same markets fat pigs sold for seven cents per pound live weight. In other words, four pounds of pork is worth more than a whole carcass of mutton, and the pelt thrown in. Not only in our large cities, but also in the country, meat is scarce, and commands high prices. Good fat mutton even, is by no means cheap. It is only the thin, half-starved sheep that are so low. It is not necessary to discuss the causes which have produced this state of things. They ought to teach us a lesson which we are slow to learn, that it is never well to rush into one kind of stock to the exclusion of all others, and then to half starve and otherwise neglect it when it proves less profitable than we anticipated. Those farmers who have taken good care of their flocks can still dispose of them to vastly better advantage than those who have neglected them. There is no profit in keeping any kind of stock unless it is kept well. There are those who think the mutton breeds of sheep more profitable than the Merino, and just now the incipient symptoms of a long-wool mania are manifesting themselves. It is simply a reaction from the American-merino sheep fever. It is clear to us that farmers who have sold their merino sheep for fifty cents a head would have done no better if they had had the English breeds. In fact, it may well be questioned whether they would have done as well, for the Cotswolds, Leicesters, Southdowns, or their grades will not endure neglect or starvation as well as our little, active, hardy Merinos. The trouble is not with the breed, but in the men.

The question recurs, What shall we do with the sheep? Stock of some kind we must keep. Butter, cheese, and beef, are very high, while wool is low, and many farmers are selling their

sheep at low figures, and buying cows at high prices. Those who propose going into dairying, with little experience, should count the cost. They have feeding racks, troughs, sheds or barns adapted for wintering sheep; but how is it with cows or cattle? They will probably need additional buildings, or will have to alter those they have, and it will take a pretty large flock of sheep at present prices to erect even a small cow stable. We do not anticipate any material reduction in the demand for American cheese abroad, while the home consumption will undoubtedly increase. Still, it is hardly safe to base our calculations on the present high prices of cheese and butter. The great drought in England—the worst that has been known since 1826—has increased the demand for American cheese, while the introduction of cheese factories into sections which have hitherto produced only butter, combined with scanty pasturage, will account for the comparative scarcity and high price of butter. It is not probable that a pound of poor butter will long continue to bring more than a pound of fine wool.

On most farms manure is a necessity, and there is no economical way of obtaining it in the interior without keeping stock. Owing to the high price of wheat, barley, oats, and corn, many farmers are determined to sow all their available land to grain. The diminished yield soon shows them their error. Disastrous as have been the effects of the sheep fever, the grain-growing mania will be even more injurious. It will curtail the profits of the farm, and leave the land in an impoverished condition, from which it will take many years to recover. We have, therefore, no alternative but to keep sheep or cattle. And our conviction is, that for the next ten years sheep will pay as well as any other kind of stock. If we had cattle we would keep them, and if we had sheep, we certainly would not sell them at present prices.

It is not easy to tell what it is best to do with such poor sheep as will not sell for more than fifty cents apiece. To try to fatten this winter would be throwing money away. If they are sound, healthy sheep, the better way probably would be to winter them on coarse fodder, with grain enough to keep them from growing thinner than they are now. The wool will pay the expense of wintering, and leave us the manure for profit. Next summer give them good pasture, and turn them off for mutton as soon as they are in good condition.

Sheep that are now fat bring a comparatively fair price. They may either be disposed of now, or fed liberally till mid-winter. By that time the thousands and tens of thousands of poor sheep that are glutting the markets will be disposed of, and there is a reasonable prospect that good mutton will command good prices.

In regard to the flock of ewes, it depends entirely on circumstances whether it is better to cross them with a Southdown or Leicester, or some other mutton breed, or to confine the flock simply to the production of fine wool. For the last few years long wooled crosses have been quite profitable. The wool has been in demand for combing purposes, and the mutton has commanded a ready sale. But of course it is useless to expect any breed or cross to produce a good fleece and a heavy carcass without liberal feeding. Those who are prepared to give extra food and attention to their flocks would do better to keep mutton sheep. If large flocks are kept, and it is necessary to put them on short commons, a well-bred, dry fleeced Merino would be the most profitable.



Fig. 1.—INLET ON CHESAPEAKE BAY.

Duck Shooting.

In October the various species of ducks arrive from the North, and congregate in the bays along the coast, where they find their favorite feeding grounds. Chesapeake Bay and its tributaries have long been famous for the immense flocks of wild fowl which resort to them at this

season. The food of the Canvas-backs is the Tape-grass or Eel-grass, *Vallisneria spiralis*. This, which, by the way, is not a grass at all, has flat, tape-like leaves, two feet or more in length, and grows in slow streams, completely submerged. It is said that the Canvas-backs eat only the roots of this plant, while other ducks feed upon the leaves. The superiority of this species of

seems to be conceded that the excellence of the Canvas-back is due to the *Vallisneria*, and this relationship is recognized in the specific scientific name, the bird being called *Anas Vallisneria*. Duck shooting calls for the display of strategy, and those who follow it for sport or for profit resort to various ingenious expedients to get near the game. One of our artists sends



Fig. 2.—SHOOTING FROM A BLIND OR SCREEN.



Fig. 3.—TOLING FOR DUCKS.

season, and have become especially noted as the resort of the Canvas-back, generally esteemed the most delicious of all ducks. In our markets, when the Canvas-backs bring four dollars a pair, other kinds are sold for a dollar or less. The ducks when they arrive from the North are very poor, but they rapidly fatten after reaching their feeding grounds. The favor-

able duck is attributable to this particular food, which is in the Chesapeake called "Wild Celery," though it has no resemblance to celery, nor is it botanically related to it. A gentleman from Albemarle Sound informed us that Canvas-backs were abundant in those waters, but as they were without their proper food, "Wild Celery," they were less esteemed than some other species. It



Fig. 4.—MASKED BOAT.

us sketches he has taken in Chesapeake Bay, which illustrate some of the methods of hunting. Certain favored spots over which the birds pass as they fly from one feeding place to another are often rented at a high rate as shooting grounds. A point of this kind is shown in figure 1. Blinds or screens are built to hide the sportsmen who lie in wait for the birds. A nearer



Fig. 5.—SHOOTING FROM FLOAT.



Fig. 6.—NIGHT SHOOTING.

view of one of these blinds is given in figure 2.

A curious way of enticing the birds within range is called *toling*, fig. 3. Dogs of a small breed are trained to run backwards and forwards on the shore; the dog is sometimes made more conspicuous by tying a red handkerchief around its body. The ducks, observing the motions of the dog, swim towards the shore to investigate; their curiosity being satisfied the flock sails off again. As they turn and present broadside to the sportsmen, they shoot and often kill large numbers. A different breed of dogs is employed to bring the dead game in from the water.

Among the other devices our artist has represented, is one in which the boat is converted into a rude resemblance to a huge swan, figure 4. A boat of this kind can be silently paddled within shooting distance of a flock, which is shot at through an opening in the breast of the monster.

Figure 5 represents shooting from a float or battery. A broad platform is so ballasted that it just floats upon the surface of the water, and is anchored in a place where the birds resort. The sportsman takes his position upon this, and is screened from sight by means of sedges or boughs. Decoys, to attract the birds, made of wood and painted to resemble ducks, are anchored near by. It is necessary to have an attendant in a skiff, at a distance, to pick up the birds as they are shot by the man on the float.

Night shooting, represented in figure 6, is sometimes practised, but is not regarded with favor by sportsmen, as the birds, if alarmed in the night, are not apt to return to the same feeding ground for a long time after being disturbed.

Punt shooting, in which an enormous swivel gun is used, the discharge of which slaughters birds by the hundred, is, we believe, properly prohibited by law in the Chesapeake waters.

Care of Tools.

We recently saw in one of the best farming districts of New England, a mowing machine left in the open field just where the last swath was finished. The man who owned it had kept it out without shelter for several years. He had unscrewed the cutting gear and housed it, from the apprehension that it might possibly rust. But he had not thought that the running gear would rust, or the wood rot. Yet this man was not lacking in intelligence or in capital. He had a good farm and plenty of barn room, and fifteen minutes' labor at the close of the hay harvest would have secured the machine against the weather. It was simply from the habit of carelessness in which he had been educated, that he did not put it under cover. That fifteen minutes of ease will cost him dear. A machine thus used may last five years, probably less. Properly cared for and housed, it would be good for ten. If his machine cost him \$125 he pays \$25 a year for field exposure. This is not all; a mowing machine never runs so smoothly or cuts so well as after a few weeks' use when it is new; every day's exposure to sun or rain, or even to the dew of the night, rusts, warps, shrinks or swells some parts, which, if kept dry and oiled, would remain in the best condition very long. So the amount of labor expended in using the machine is greatly increased, and even the extra amount of oil and the greater frequency of application will of itself be an important item, and we may add to the \$25 a year above stated, \$5 more to balance the account of pecuniary loss and extra labor. This is patronizing the picturesque at great disadvantage. Can farmers afford this esthetic indulgence?

Walks and Talks on the Farm—No. 58.

We got home yesterday from a fishing excursion among the Thousand Isles. The children enjoyed the trip as much as any of us, and returned home a great deal better. The *Agriculturist* is right in advising farmers to take a few days' recreation. We need it as much as the professional or business man. The mind is apt to get into a rut, and a change of scene and associations is as beneficial as a change of air and occupation. The despondent man finds that others, too, have their trials, and that weeds grow in other sections as well as in his own, and he will come home with a determination to take a more cheerful view of his lot in life, to be a better man and a better farmer. The self-satisfied man—if such an individual can be found among our farmers—will find that there are other people in the world as conceited and as disagreeable as himself, and he may return home with a few new ideas in his head, and a grain or two of humility in his heart.

You have to hire a boat and a man to row, who furnishes the fishing tackle. We got to the Islands about 6 o'clock in the morning, and by 8 o'clock we had had breakfast, and were in the boat trolling for pickerel. The change from a dusty summer fallow to the cool breeze on the lake-like river was most invigorating; and when we got a seven-pound pickerel at the end of a two hundred foot line, we forgot that there was such a thing as winter-kill or rust or shrunken wheat; that weeds grew fast and hired men worked slow; almost regretted to see a black cloud in the west, although the potatoes at home were suffering from want of rain. In fact, we found what we sought,—a few days' relief from the cares, toils, and anxieties of farm life. The man whom we engaged to row our boat proved to be a farmer. He owned a farm of over two hundred acres on one of the Islands, but rented it out on shares and occupied himself during the fishing season in rowing, and at other times he "traded a little," buying chickens, turkeys, and geese, and sending them to New York. An English gentleman who was one of our party could hardly believe that the man we had hired to row us was "a farmer." "And," said he, when the idea got fairly into his head, as it did in a day or two, "he is not only a farmer, but he is a landowner, and yet he is here rowing a boat for hire and cooking our dinners!" Butter was selling at wholesale in the neighborhood for 40 cents a lb., and potatoes \$2.00 a bushel; oats, 75 cents; barley, \$1.50; spring wheat, \$2.00; and other things in proportion. At the hotel we could rarely get a tomato or a cucumber, and melons would have brought any price that might be asked. Huckleberries were provided on Sunday as a special treat for tea, and once or twice we had stewed apples. Beef, taking quality into consideration, was higher than it is in England, and yet the owner of a two hundred acre farm thought he could make more by rowing a boat by the day than in cultivating his land!

We visited one farmer who had bought a whole island of about 120 acres in the middle of the river, some four miles from either shore. He was monarch of all he surveyed, and as happy as a prince. He had a capital garden, and his good wife had covered the piazza with morning glories, flowering beans, Virginia creeper, etc. He raised good crops of spring wheat, corn, oats, potatoes, etc., and on my complimenting him for his good farming, he remarked,

"The land is first-rate, but it has been neglected and is full of weeds, but I'll fix 'em." "You can't do it, Old Boy," said one of the oarsmen. "The ground is full of weeds, and always will be. It's no use your trying to get rid of 'em." "But if none are suffered to go to seed," I remarked, "and you kill all that grow, you will in time have a clean farm." "That may be so, where you come from," he replied, "but it isn't so here. The ground produces them, and as long as there is any ground left, you will have weeds, and they are getting worse every year."

Of course, a man who has such notions mistakes his calling when he turns farmer. He had better row a boat for a living. Few people will confess that they think weeds spring up spontaneously, but there are a great many farmers who act as though they believed it. And yet it is certain that a soil can no more produce weeds without seed, than it can wheat or corn.

I visited a farmer who keeps a dairy of eighty cows. His dairy-house and cheese-room were at some distance from his residence, and he hired a man to make the cheese, who did all the work. It seemed to be a very nice kind of farming, and I told him if I could get men to milk, I would go into the dairy business myself. "No trouble about getting people to milk," he replied. "I don't hire a man or woman that can't milk, and most of them would rather milk than work in the field. We have a good many Canadians who come here to work, and over there you know, the women do the milking, and the men seem to think it is beneath their dignity. Sometimes a man comes here who wants work, but objects to milking. 'Very well,' I tell him, 'you need not milk.' At 5 o'clock in the afternoon the horn blows, and they all come home to lunch. They are pretty tired, and sitting down on a stool to milk is quite a relief. The new man is sent back to the field to work, sometimes all alone, and it is not many days before he requests to be allowed to milk."

There, as here, the pastures are suffering for want of rain, and few farmers have a supply of corn fodder to fall back upon. As a general rule, the corn fodder is as poor and as much dried up as the grass. It is sown broadcast, and suffers from drouth as much as the pastures. In a favorable season, and on rich land, a good crop is sometimes raised in this way; but in unfavorable seasons it is not needed, as the same causes which produce good corn fodder produce good grass. Corn fodder, to grow well and keep green during a severe drouth, needs rich land and thorough cultivation.

The truth is, if we farmed better, we should not be so constantly complaining of drouth. There are far worse evils than a dry, hot summer. We need heat to push vegetation forward rapidly. But a plant cannot grow without food, and if it has more heat than it has food, and has not an accumulated store in itself to fall back upon, it withers up. That plants store up matter cannot be doubted. The seed of timothy is formed from organized matter accumulated in the stem and leaves, and not directly from food obtained from the soil. The same is true of oats, and doubtless of wheat, corn, barley, peas, beans, clover, etc. Where there is an abundance of this organized or partly organized matter in the leaves and stems of wheat, for instance, dry, hot weather will not hurt the crop. But if there is a deficiency of this matter, the heat will shrivel up the grain. What we should aim at is to get a healthy, vigorous growth before the hot weather sets in. We

know from actual experiment that an active artificial manure, like sulphate of ammonia, will do more good on winter wheat when sown in the fall, than when sown just before the plants begin to grow in the spring. One would think that during the cold weather of the fall and winter, when there is little growth, the manure was not needed, but doubtless there is a greater accumulation of matter in the roots and leaves of the plants, and when the warm weather comes, the crop "shoots right ahead." I will not say that a liberal top-dressing of good manure this fall will prevent a pasture from drying up next summer, but if other conditions are favorable, I have no doubt that such would be the case. And stock will do better in such a pasture if we have a dry, hot summer, than if we have a cool and moist one. There will not be so rank a growth, but the grass will be richer. It will be more highly organized, and consequently far more nutritious.

Except in the neighborhood of large cities, "High Farming" may not pay, owing to the fact that we have so much land. But whether this is so or not, there can be no doubt that the only profitable system of farming is to raise large crops on such land as we cultivate. High farming gives us large crops and *many of them*. At present, while we have so much land in proportion to population, we must, perhaps, be content with large crops of grain, and few of them. We must adopt the slower but less expensive means of enriching our land from natural sources, rather than the quicker, more artificial and costly means adopted by many farmers in England, and by market gardeners, seed-growers, and nurserymen in this country. Labor is so high that we cannot afford to raise a small crop. If we sow but half the number of acres and double the yield, we should quadruple our profits. I have made up my mind to let the land lie in clover three years instead of two. This will lessen the number of acres under cultivation, and enable us to bestow more care in plowing and cleaning it. And the land will be richer and produce better crops. The atmosphere is capable of supplying a certain quantity of ammonia to the soil in rains and dews every year, and by giving the wheat crop a three years supply instead of two years, we gain so much. Plaster the clover, top-dress it in the fall, if you have the manure, and stimulate its growth in every way possible, and consume all the clover on the land or in the barn-yard. Do not sell a single ton; let not a weed grow, and the land will certainly improve.

The first object should be to destroy weeds. I do not know how it is in other sections, but with us the majority of farms are completely overrun with weeds. They are eating out the life of the land, and if something is not done to destroy them, even the present high prices cannot make farming profitable. A farmer yesterday was contending that it did not pay to summer fallow. He has taken a run down farm, and a year ago last spring he plowed up ten acres of a field, and sowed it to barley and oats. The remainder of the field he summer-fallowed, plowing it four times, and rolling and harrowing thoroughly after each plowing. After the barley and oats were off, he plowed the land once, harrowed it and sowed Mediterranean wheat. On the summer-fallow he drilled in Diehl wheat. He has just thrashed and got 22 bushels per acre of Mediterranean wheat after the spring crop, at one plowing, and 26 bushels per acre of Diehl wheat on the summer-fallow. This, he said, would not pay, as it cost him \$20

per acre to summer-fallow, and he lost the use of the land for one season. Now this may be all true, and yet it is no argument against summer-fallowing. Wait a few years. Farming is slow work. Geddes remarked to me, when I told him I was trying to renovate a run down farm, "you will find it the work of your life." We ought not to expect a big crop on poor, run down land, simply by plowing it three or four times in as many months. Time is required for the chemical changes to take place in the soil. But watch the effect on the clover for the next two years, and when the land is plowed again, see if it is not in far better condition than the part not summer-fallowed. I should expect the clover on the summer-fallow to be fully one-third better in quantity, and of better quality than on the other part, and this extra quantity of clover will make an extra quantity of good manure, (and there will be more clover roots in the land), and thus we have the means of going on in improving the farm.

Barley is a paying crop on good land. I am offered \$1.50 a bushel, and I see Canadian barley is quoted in Buffalo at \$1.75. I had 525 bushels, "thrasher's measure," from a little over 10 acres, and have some rakings yet to thrash. This field was heavily manured for corn, and was sown the last of March and first of April. On another field of about 14 acres, not manured, but thoroughly cultivated for two years in beans and corn, I had 420 bushels, or only 30 bushels per acre. Now the extra yield of 20 bushels per acre, say \$30, will go far towards paying for the manure, and I am satisfied that there is considerable strength yet left in the land, which will manifest itself on the wheat. I am encouraged to go ahead and try to make more and richer manure. I have got in over a hundred good loads of clover hay, and I propose to feed it all out this winter. I have a big stock of timothy, rather unripe, from the "old stump lot," and if the drought in England puts up the price of hay here to \$25 per ton, as is quite probable, I will sell it, and buy oil cake with the money to feed out with the clover hay. So with the clover seed, if we have any. And if the paper men will pay as much for straw as they did last year, they shall have half the stock, and I will buy oil cake with the money to feed out with the other half and with the clover. I shall not get more than half the bulk of the manure, but one load will be worth two, and we save half the labor of drawing out and spreading.

But do not sell nice, bright, wheat straw, as one of my neighbors did a few days since, to the paper men for \$2.00 a load, and they put on from 20 to 25 cwt. on each wagon. There is an unusual quantity of straw in the country, but if we are to have an export demand for hay at high prices, we shall need all our straw before the middle of May. The Deacon says he has observed that seasons which give us a large quantity of hay and straw, are followed by long-foddering or severe winters, and there is none to spare. The hay, too, is perhaps not as nutritious, and does not spend as well. At all events it is unwise to waste or sell the fodder thus early.

In harvesting clover for seed, why is it necessary to let the crop lie in windrows or small bunches until the fodder is spoiled? Will not a good machine thrash it clean unless the heads are steeped as they do flax, and rotted? An old farmer who lets his clover lie out sometimes until snow comes, told me that frost would not hurt the seed after it was cut (which is true), and that it was necessary to rot the heads in

order to get the seed out. I take as much pains in curing clover for seed, as for hay, and when the weather is favorable and the clover heavy, it makes hay that smells as sweet and looks nearly as fresh as the first crop. And I do not believe there is any trouble in thrashing it—though it is true I have never yet had more than two and a half bushels of seed per acre. If there is a good growth of clover, it will yield at least a ton to the acre. And a ton of clover and seed, when well cured, contains about 50 lbs. of nitrogen. A bushel of clover seed contains probably about as much nitrogen as peas, say 2½ lbs. Now if in such a crop we get 4 bushels of seed per acre, there is 10 lbs. of nitrogen in the seed and 40 lbs. in the fodder. And it seems a great pity to waste the latter. John Johnston says a crop of clover seed will impoverish the land more than a crop of wheat. And it is a fact that a ton of clover hay contains more nitrogen than 30 bushels of wheat and straw. But in the case of the wheat, about 40 lbs. of the nitrogen is in the grain, and 10 lbs. in the straw, while in the case of clover only 10 lbs. is in the seed, and 40 lbs. in the straw. So that if the clover straw is retained on the farm, the exhaustion is more apparent than real. The land from which the crop of clover seed was taken, might exhibit symptoms of exhaustion, as compared with a field that was pastured. But still, four-fifths of what is taken from the field is returned in the shape of manure, and the *farm* only loses one-fifth, while in the case of wheat it loses four-fifths.

OSAGE ORANGE AND SILK-WORMS.—André LÉTOY, of Angiers, France, writes to the *Revue Horticole*, that the Osage Orange has not received the attention as an ornamental tree that it merits. Mr. L. states that the leaves answer as a substitute for those of the Mulberry, as food for the silk-worm. He says: "Of 4,000 that I have raised with the leaves of this tree I have not lost one. Now they have commenced to spin and give me superb cocoons."

Curing and Use of Corn Fodder.

Well cured corn stalks of the smaller kinds are worth as much as good hay as food for cattle, if cut up while green, and one or two days before the first frost. The very early kinds usually will ripen and turn brown before frost, and by this process of ripening, just as it is with grass that stands too long, the sapid and nutritious substances are, to a great extent, converted into or enclosed in woody fiber, so that they are neither palatable nor useful to the stock. Frost produces an immediate change of a similar character, chiefly in the leaves and tender parts of the stalks, which are the most valuable for feeding; but if they are exposed for a few hours to the hot sun after cutting up, though quite green, so much of the water evaporates that frosts produce little or no effect. It requires, however, a good deal of drying to extract sufficient water from the thick bolls to prevent them moulding when housed. After the corn is cut up and placed in stooks, well braced and bound to prevent rain from entering and wind from overthrowing them, this may go on gradually for several weeks. The grain if not quite ripe gains rapidly, at the expense of part of the juices of the stalks. When the ears are hard and their butts dry, they may be husked. The stalks will still need more drying in all probability, and bound in bundles of convenient size, should be again stooked up as before. If care be taken

that no stooks are left partly or entirely blown over, and that no bauldes lie upon the ground, the corn fodder may stand out until there is danger of snow, without essential harm, and the more thorough the drying, the less the liability to mould. Musty corn fodder is not so unpalatable to the stock as musty hay, but the loss of nutriment must be about the same.

When sowed corn is cut for dry fodder, the stubble should be left low, and after one or two days sunning and turning, the corn should be bound in small bundles, and set up in small open stooks well braced, or against a fence, or against both sides of poles, supported $3\frac{1}{2}$ or 4 feet above the ground, by being bound to stakes with withes, or laid in the crotches of crossed stakes. This is perhaps the best way; the fodder is kept clean, it has thorough airing and dries more rapidly than if stooked. These ranges should stand north and south, so that the sun may have equal chance at both sides.

The value of this material for food is seldom if ever overestimated. Cut up, salted a little, sprinkled over with corn meal or oil-cake, and then moistened thoroughly and left 12 hours, it is made one of the most nutritious and palatable articles of diet for cattle. Horses also thrive upon stalks prepared in this way, but it is not best to let it form too large a proportion of the feed of working horses, as it is said to make them what is termed "soft." A very large part of the value of this fodder is in the stalks, but these are often so tough and hard as to be unpalatable even after they are soaked. Cooking by steam is therefore highly approved of. No practice is so wasteful as feeding cornfodder uncut, when cattle simply strip off most of the leaves, and, if fed upon the ground, trample a large portion of the remainder into the dirt.

Virginia Way of Loading Heavy Logs.

All the handy ways of doing things do not originate in Yankeeedom, by a great deal. Handling heavy logs is one of those jobs which any farmer but a real woodsman undertakes with the hearty wish that it were over. A Virginia correspondent goes to work in the following way. He has a "hook" made of a bar of iron 2 inches wide by $\frac{1}{4}$ inch thick, bent so that it will hang over the top of the wheel as seen in the engraving, figure 1. It is really two hooks connected by their shanks, forming a sort of horse-shoe shaped bow or bight, which hangs below

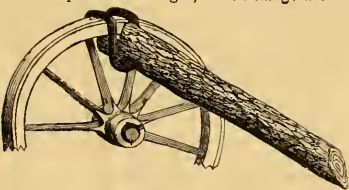


Fig. 1.—SKID AND HOOK.

the fellee. Into this bight the end of a skid is placed. This is notched so that when the log is drawn up it will roll over the top of the wheel. For hauling short distances one pair of wheels answers best. The butt end of the log is, of course, put upon the axle, and the wheels are cramped with regard to the skid, so that when the log rolls up it will not roll off the wheel on which the skid rests, without bearing upon the other wheel, and thus being let down upon the axle without a fall, and without "clocking." After the wheels and skid are in position, if a chain or rope is attached to the axle, and passed

under and over the log, a pair of horses or cattle will quickly roll it up. In hauling long distances a wagon should be used, in loading which two skids are needed, and it is usually best to take

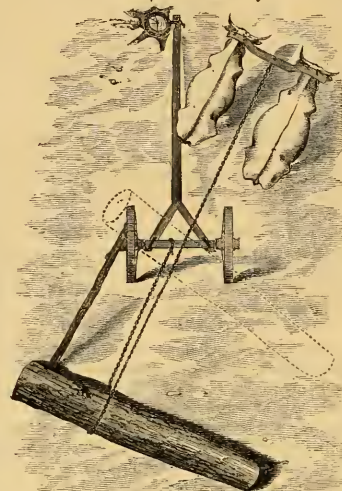


Fig. 2.—ARRANGEMENT FOR LOADING HEAVY LOGS.

off one hind wheel. The diagram which accompanies this, shows about the relations of log, skid, and pair of wheels; the dotted lines indicating the position of the log as it is hauled up. The tongue of the cart should be made fast to a stump, crowbar, or something of the kind. Simple mechanical contrivances like this will often save a great deal of hard work. Almost every farmer has his peculiar methods of lightening or expediting work, and it should be a pleasure to communicate them to the others.

Storing Potatoes for Winter.

It is often a matter of very great pecuniary importance for a farmer to be able to keep his potato crop until spring. Many made very handsome sums by pursuing this course, the past season. Potatoes were bought last fall for fifty cents a bushel, and those in good order were sold very generally in spring for two dollars. As long as the custom of early marketing prevails so generally, the man who cultivates the new seedlings and stores them until spring, will be likely to pursue a safe course. Prices are generally enough higher to pay for the extra handling, and leave a margin for profit. They can be stored upon the surface of the ground in any dry position in the same manner as turnips, but this requires much care in covering the pits on account of the extreme weather that prevails in the best potato districts. It is not uncommon for the earth to freeze two feet deep, and the raising of a mound with walls of that thickness over potatoes is a great labor. It has its advantages however in saving carting, and once handling. The heaps or pits are usually made upon the field where the potatoes grow, and so near together that when the potatoes are picked up they are taken directly to the heaps, which contain from 30 to 100 bushels each, as suits the convenience of the farmer. A light covering of straw is thrown over the heap and the earth is put upon the straw, making a roof that will shed water and keep out the frost. When the farmer wishes to keep his pota-

atoes for the spring market, this is a good method. Another way is to store the potatoes in pits, partly below the surface, but this can only be done where the soil is perfectly drained. There is not much difference in the labor involved, or in the security of the crop against frost. Farmers living near ports, who wish to ship their potatoes in the winter, build cheap vaults or cellars in hill sides, that will hold from 500 to 1500 bushels. The vault has a window and shoot arranged for tipping in a cartload at a time, and a door is upon the south end for taking the potatoes out. In New Jersey and on Long Island it is quite common to store potatoes in the house or barn cellar, to be ready for market at any time when the prices suit. Immense quantities are stored by dealers in the city of New York, mostly in barrels, but sometimes in bulk. In cellar storage straw should be thrown over them to keep out the light. This crop keeps best, away from the air, in darkness, and at a low temperature, a few degrees above freezing. That method is best which secures these conditions most perfectly, with the least labor and with the least expense.

Loss in Stacking Hay.

A farmer of sound judgment, and large experience in cutting and storing hay, estimates his own loss in stacking at twenty-five per cent. He cuts probably a hundred tons a year, and stacks a fifth part of it for want of barn room. He has very properly made up his mind to build a new barn. We think his estimate is not wide of the mark. There is a large loss from moulding at the bottom of the stack, and old rails, boards, or straw, will not wholly prevent it. Then the whole external surface for 3 to 6 inches, is weather beaten, and loses much of its sweetness, and it is not improbable that this loss of aroma extends through the whole stack. The conviction is universal among intelligent men that barn stored hay is worth much more than that which is taken from the stack. Why then follow this wasteful practice? Look at the great loss to this farmer who cuts one hundred tons of hay worth \$2,000. According to his own estimate he pays \$100 a year for the privilege of stacking one-fifth of his crop. This is but a small part of the loss where the hay is fed out at the stack. It costs at least a third more hay to keep cattle without shelter. These are strong arguments for more barn room.

A Danish Cow Halter.

The horns of neat cattle offer a means of attaching a rope to tie them by, to which we are so much accustomed that other head fastenings seem awkward under any circumstances. Neck ties are in common use, and allow the animals more motion with the head than halters or head ties, but less with the body. Fractious animals are in danger of hurting themselves in their plunges, when they are fastened either by the neck or with a halter. Hornless cattle must be fastened in one or the other of these ways, and a halter which will give perfect control over the animal is a desideratum. A young Danish farmer made in a few minutes,



CATTLE HALTER.

and applied to a hornless cow of the writer's, the device which we figure. It is easy and not in the way if the cow does not pull, if she does it causes pain by drawing the two cheek sticks together, causing them to press on the cheek bones. The tie line is placed in the long check piece

Left-hand Plows and Three Horses Abreast.

In the June number for last year we had an article on using three horses abreast, claiming for the practice a notable increase of power—that is, a more economical application of the power; and following it was a discussion of the merits of left-hand plows. "H." of Hampshire Co., West Virginia, sends us a brief description of how they use



three horses before left-hand plows in his neighborhood. It will be understood with the accompanying diagram, which supposes the observer looking directly down upon the plow and team. Our correspondent says: "With a left-hand plow the near horse walks in the furrow, and is called the 'leader.' He is driven with a single line, a steady pull upon which means *Haw!* and two or three successive jerks, *Gee!* The other horses are managed by 'coupling straps' and 'jockey sticks.' Many do not know how to hitch up such a team, and I will describe our way. The outfit required besides the common plow-gear, is two jockey sticks, two coupling or hold back straps, three whiffletrees, a double-tree and tripple-tree. These being

at hand, first lay the tripple-tree on the ground with the long part to the right; put the double-tree on the left, and a whiffletree on the right, and two whiffletrees on the double-tree. Then put the leader in place; next hitch up the middle horse, fastening the jockey stick to his high bit-ring, and to the hames-ring of the leader. Connect the bit-rings of the middle horse by a chin strap and carry the coupling strap or rein back, attaching it to the leader's trace-chain, well back, so that he cannot get ahead of the leader. Hitch up the outside horse in the same way; then all will work in line, and, as the leader walks in the furrow, little or no driving is required. Two men with three horses each can plow in this way as much in a day, and do it as well, as three men with two horses each, saving the labor of one man."

Mr. Harris, in his "Walks and Talks" in July last, discusses briefly "three-horse eveners" and how to make them, to which we refer the reader.

Thorough Draining and Deep Tillage.

We had a wet spring, at least in some parts of the country, though it was dry enough in others. It is strange that wet seasons set people both thinking and working at underdraining—while dry ones do not. Yet this very year wherever drought has parched the soil and hurt the crops, well drained land has come out comparatively well. Thorough draining means deep tillage, for no wise man puts from \$50 to \$90 expense upon an acre—unless it be on a

graded lawn—and then leaves it with only surface culture. The plow is followed by the subsoiler, and the yellow dirt sees the light little by little, year by year, until a rich crumbly soil a foot deep rolls up in mellow waves, behind the great plows,—never wet, never dry, always moist, never cold, early in spring, late in autumn, inviting culture and well rewarding it. We are too apt to look upon droughts as dispensations of Providence which we must take without repining, and cannot ward off. A few years ago the old fogies held that the reclaiming of swamps and bogs was flying in the face of Providence, as if they had not been created for some wise purpose. So indeed they were—on purpose to be drained, and so if you please droughts are sent on purpose to test our good husbandry in avoiding the harm they might do us, and profiting by the good. The flow of water during droughts being upward by absorption and evaporation, fertilizing matters are brought up to the surface which in ordinary seasons are washed down; hence the years succeeding dry ones are often years of plenty.

Drainage is usually best done in Autumn; its principles are simple and when well understood success is certain. We have often discussed the subject, and there are excellent treatises upon it, of which none is better than Col. Waring's *Draining for Profit*, (see our book list on another page) which gives the best ways for doing every thing, under the supposition that, if it is either necessary or desirable to slight the work or only half do it, methods enough will suggest themselves to almost any body. Drains should take the most direct course down hill. The tiles should be too small rather than too large. For if small the swifter current will keep deposits from forming which would fill up large tiles. Wherever the line of descent is changed to a less fall per foot a silt-basin should be placed. A very gradual fall is all that is needed if it be regular. The bottom of the drain is the most important part to have exactly right; hence too much pains can hardly be taken to have the final grading perfect, and the tiles well laid. Collars for the tiles are of great advantage. The value of the drain is determined by the excellence of the poorest tile and the worst laid one in its entire length; as the strength of a chain is measured by that of its weakest link. Drains must receive their water from the bottom, not from the top, hence, pack clay or stiff soil upon the tile and make this layer 16 inches above the tile impervious to water. Deep drains farther apart are more economical in the long run than shallow ones near together—four feet being the depth usually advised and seldom reached. Tiles are often cheaper than stones, even if the latter encumber the land.

Implements for Cutting up Corn.

In cutting up corn we believe in either leaving fully eight inches of the butts, or in cutting as close as possible. It is a little easier to cut, leaving long stalks, but this involves in neat farming the labor of dragging the field with a pole, when the ground is frozen, in order to break the stubs off from the roots. When corn is to be followed by spring grain of any kind, it is very desirable to plow deeply enough to cover stubs and roots together, so that they will not be harrowed out, and lie on the surface, where they will be useless as manure, and in the way of the following grass crops. If the roots only be left in the ground, or if the stubs and roots are broken apart, there is little difficulty, and few

of either roots or stubs interfere with the evenness of the meadow when laid down to grass.

Were a dozen men to go to a field to cut up corn, scarcely two would have supplied themselves with exactly the same instrument. We describe and illustrate several of the common corn cutters. The most common is doubtless the *broken scythe blade*—variously handled. This simple blade, 18 to 20 inches long, may have a handle made, as in figure 1, by riveting



Figures 1 and 2.

A piece of wood upon each side at one end, or the edge may be battered down at that end for a few inches, and wound with leather or coarse cloth. This forms a heavy knife which will cut off three or four stalks at one blow, and has its representative in the stores in one of the many forms of the cane knife which is shown in fig. 3. These knives (*Machettes*) are made for the Southern trade, but some forms are very useful on the farm, and they may be bought for 63 cents or more a piece. Another home-made corn knife is part of a blade of a scythe, sickle, or any large knife, set diagonally to the handle in which it is riveted. Figure 2 represents still another kind of corn cutter, kept for sale in all the implement stores (costing about fifty cents), which is made in a similar manner to the one just described. We have repeatedly received sketches or descriptions from correspondents of a very simple and expeditiously made knife which is illustrated by fig. 4. It is a blade of any kind thrust through a piece of corn stalk near one of the lower joints. We have represented it as the point of a scythe passed through the corn stalk and bound in with wire. The wiring may not be necessary where they grow very stiff corn stalks. Implements in which the blade is at a considerable angle

Fig. 3. to the handle may be used with a drawing stroke, as well as for cutting with a blow.

Tools made for other purposes are in some hands very advantageously applied to cutting up corn. One of these is the sickle, or rather the grass hook, for the genuine sickle is a rare implement in modern farming. A large and rather heavy one should be selected, and it will be found one of the handiest corn cutters. The sickle form makes it useful in expeditiously gathering stalks that fall. The common bush scythe is less frequently used, but wielded by a strong man in heavy corn, three men will have about all they want to do to pick up and stack the corn as fast as it is cut. Finally we come to the common *field hoe*. The implement which has contributed so essentially to the growth of the plant, is one of the handiest to cut it down. Furnish a good steel hoe with a handle 16 to 18 inches long, and bring it to a sharp edge on the grindstone, and you have an efficient corn cutter. A single blow will cut up a hill of ordinary eastern corn, unless the stalks are a good deal scattered. It has the advantage in common with the bush scythes that the stalks may be conveniently cut very close to the ground.



Fig. 4.

Water for Man and Beast by the Road-sides.

A few months ago we asked the question, Why watering troughs are common by the roadsides in New England, rare in the Middle States, and almost unknown at the West? A correspondent, "H. T. H.," writing from Saratoga Co., accounts for the fact, by the geological formation of the country in these different districts. Springs, he says, burst from almost every New England hillside, while the brooks are in deep bridged gorges. In the Middle States the brooks are generally easy of access from the roads and so the necessity does not exist; while in many districts at the West both brooks and springs are very scarce. This is in a measure true, and perhaps the reason—nevertheless, the desirableness of having watering places both for men and beasts on all highways of general travel is a thing to be impressed upon every community. Horses ought to have an opportunity of drinking freely once in about an hour, while on the road, but not when approaching the journey's end. In hot weather, especially, they will go much farther, and draw greater loads with less fatigue and danger of injury from overwork, if frequently watered. The attractions along a line of travel are too often the taverns and dramshops, at intervals of short stages. Here one always finds the pump and water trough, and many a man would gladly pass by were it not for the necessity of watering his beasts, while many another rejoices in having a good excuse for taking time to solace his appetite with something less refreshing and more likely to do him harm either in dog days or in January, than pure water. "Drive Wells" are becoming quite common and are very cheap. They are of use, especially in countries where bubbling springs and hillside rills are not abundant. One of these set at a cross-road would often accommodate several neighbors in watering their cattle, etc., besides being of great service to the traveling public. A sound molasses hogshead makes two capital troughs; an old bent gunbarrel is an excellent spout for the water, and the best drinking cup for men to be kept by such a wayside fountain, is the face half of a cocoanut shell. The "mouth" hole being open, this affords a fine place to hang it up by, and this half of the shell is so nearly worthless for any other purpose that no one will steal it.

Tim Bunker on being "Sound on the Goose."

MR. EDITOR:—That letter you sent me from a Kansas man, who wants to know "if there is any profit in raising geese, feathers being seventy five cents a pound," struck me kind of queer. Are feathers the main thing in a goose? And if so, have they not found out all about it in that region where the "goose question" has been the main one discussed for the last dozen years? We are all *afloat* on that question out here in Hookertown, as the geese love to be, but I had supposed it was settled in Kansas some time ago. My neighbors, as I found when I came to consult them, were a good deal divided. We still keep up the Farmer's Club at the school house, that I wrote you about some time ago, and Tim Bunker's pew, as Jake Frink insists upon calling it, is pretty well filled even in dog days. Deacon Smith, who has large orchards, and grain fields fenced with rails, said it would not pay to raise geese. They were a

mischievous bird, always poking their necks through fences, and destroying more crops than they were worth. He wished there was a law against keeping them in any civilized community." Seth Twigg thought "feathers hadn't nothing to do with the question. I always sell my goslings at so much a head, and if the price is high enough, it pays. Otherwise it don't. A good deal depends upon having the right woman to take care on 'em."

"That's so," said Jake Frink. "Polly aller's makes her geese pay, and if I undertake to manage 'em it is no go. They don't hatch, or if they do, the weasels catch the goslings, or they get rose bugs in their crops, and they die on a sudden. I never had any luck with the critters."

Our minister, Mr. Spooner, said: "The profitable raising of these fowls depended very much upon circumstances. If one had a pond and an inclosed pasture near the house, and skill in the business, it was very profitable to have water fowl. But in a village like Hookertown, where neighbors were brought quite close together, he thought it a nuisance to keep geese in the highway. Even if they were yoked, they would sometimes break through into the garden, or the grain field, and do damage, and the injured party, perhaps, would lose his temper and kill his neighbor's geese to avenge himself. He had known long family quarrels to begin in some small trespass of this kind. He thought they ought to be kept out of village streets, as much as cattle and pigs, and if a man had not room for them upon his own premises he should not raise them."

This brought George Washington Tucker to his feet, whose geese are always in the road, when they are not in his neighbor's fields. "I can't see what's the use of having a common, and grass on it, if nothin' is gwine to eat it. There is a dozen acres or more here in the street, and there used to be a horse pond before Tim Bunker drained it, where poor folks could water their cows, and their geese have a place to swim. I am glad he can't drain off the grass into his own fields. If poor folks couldn't have their geese in the road they would have to give up raising 'em."

This discussion shows that Hookertown is not a unit on the goose question. We are an old community, and most of the people think they are civilized, but we have never been able to get geese out of our streets. The poor raise the cry of persecution, and the sight of that green grass on the common going to waste troubles a good many people besides Tucker. The geese at times make a good deal of trouble, and some have given up keeping them on this account mainly. This of course enlarges the pasture for others, and the flocks of Jake Frink, Tucker, Jones, and that kind of company, are always represented. They not only get into gardens, but into the meeting house on Sunday, or rather their noise does. I have seen many a good sermon spoiled by the noisy creatures. Just as Mr. Spooner gets in earnest and raises his voice, the geese set up their squawking, and the attention of the people is diverted. The windows are all open, these hot Sundays, and the geese seem to think church is held for their benefit. They speak in meeting a little oftener than is for edification. Mr. Spooner, of course, thinks goose raising won't pay even with feathers at 75 cents a pound. There is some human nature in the pulpit, as well as in the pews.

They manage this business better down in Shadtown, where they don't allow any animal in the street. Every man who raises poultry

must keep them upon his own premises. The farmers there derive a handsome income from their poultry. They are favorably situated for raising water fowl, and have a great contest at the fairs in taking the premiums for the finest birds and the biggest flocks. The conditions of success in raising geese are a pasture with a pond in it. A small pond covering say less than a quarter of an acre is preferred to a running stream, or a large sheet of water, because it is more easily watched and kept free from minks, turtles, and other enemies of the flocks. They have a good many of these ponds naturally, and if nature has not favored them, they make ponds by puddling a few square rods with clay. Some use troughs, but they are not so good. The poultry woman seeks to make the most of the few geese she keeps over for stock. By good feeding they are encouraged to lay early, and the eggs are hatched out under hens. They will lay two or three litters, the last of which they are allowed to sit upon. The critical time with the goslings is when they first come off the nest and begin to feed. They are fed with dough made of Indian meal and "ballasted" with sand. This is considered very essential by the most skillful raisers. They gather sand from the shore and put it in a saucer with water, to which the young birds help themselves. They have the impression that many unskilled persons lose their goslings by turning them into pastures where they cannot get sand or gravel to fill their gizzards. However this may be, the poultry women of Shadtown are remarkably successful with their geese. They feel sure of a gosling that has taken in ballast. They are fed daily with dough, but get most of their living from grass. Flocks of one and two hundred are not uncommon, and a large trade is carried on in young geese for the city markets. Middlemen buy of the farmers when the goslings are about six weeks old, giving a dollar and a half apiece. They are put in pens and fattened a few weeks, and then dressed for market. The middlemen think the business pays, and the farmers are well satisfied with their share of the profits. If the housewife wishes to fill a bed or to make a down comforter for her daughter's wedding, she keeps her geese until Thanksgiving or Christmas, when the feathers and down are perfect, and the flesh is cheap, but the early sales are preferred without reference to the price of feathers. The Shadtown folks are "sound on the goose."

Yours to command, TIMOTHY BUNKER, Esq.,
Hookertown, Conn., Aug. 15, 1868.

An Out-door Cellar.

The storing of roots and vegetables in a house cellar in large quantities is always objectionable. The temperature is necessarily increased by the fires kept up in the house during winter, and this favors decay, or commencement of growth in vegetables. Besides gaseous substances of an unpleasant odor usually pervade the dwelling, which are injurious to health. Serious illness frequently arises from these well stocked cellars. A safer plan is to have the cellar store-room by itself. The best location is in a sandy or gravelly hill side, that needs no drainage in the wettest season. If not dry it must be made so by artificial means. One half the depth of the cellar may be below the surface. A room ten feet square and eight feet high will hold about 640 bushels, and each additional foot of length will add 64 bushels to its capacity if filled full to the top. A narrow width is to be chosen on account of convenience in roofing. In a region

of stone, this is the best material for the walls. Build them eight feet high and provide space for stairs and door at one end. Stone is also the best material for covering, if slabs twelve feet long can be procured to reach from wall to wall. In a granite or blue stone region these are easily procured from quarries by "gagging." Leave a man-hole at the top, large enough for ventilation and for pouring in roots from the cart. The sides, and top of the cellar should be covered with not less than two feet of earth, and neatly sodded. If on a side hill, it may be so arranged as to drive loaded teams on top. If stone for the covering is not convenient, a roof may be made by running up gable walls, putting on a log ridge pole and log rafters arranged like a common roof. The rafters should be placed near enough to touch one another, or nearly so, and be strong enough to hold the covering of earth. Batten the rafters with slabs and cover all with earth and sods. In a region where wood is plenty, and there is no stone, the whole wall may be made of logs. When finished it will be simply a log house under ground. It will serve a good purpose for many years. Concrete also makes excellent walls, and this material may be laid in the form of an arch. If the cellar is made of stone it should be cemented to keep out all depredators.

Winter Rye.

Rye may very properly be classed among the neglected grains. It is not only less sown than wheat, oats, and corn, but it is put upon neglected land by a class of cultivators who neglect every thing they undertake to raise. When land will no longer bear wheat and corn, it is turned out to pasture, and rye, and is run in this rotation until five fingers, St. Johnswort, and mulleins take full possession. Wheat is the lordly grain, and receives by far the larger share of attention. New varieties are brought from abroad, and originated at home, that farmers may have just what they want to escape the ravages of insects, and make the most of the peculiarities of their soil and climate. But rye is about the last resort of the poor farmer for breadstuff, and he seldom looks upon the contingencies of the next harvest. Yet there is no occasion for the general neglect of this grain. Its alimentary value is not much below that of wheat, and its market price is only about one-fifth less. It makes a very handsome and palatable bread, welcome as a change of diet upon all tables where it has been favorably introduced. It does best upon a rich hazel loam, but makes a crop upon almost any sandy or gravelly soil in fair condition. It is quite too generally grown upon a soil without any manure, yielding ten or twelve bushels to the acre. It is much better for the farmer and his soil, to use manure and take twenty-five to thirty bushels to the acre. Well rotted stable manure, or compost, is a good fertilizer for this crop. At least half the quantity used should be spread broadcast after the plowing, and be thoroughly harrowed in before sowing the seed. Of the commercial manures, Peruvian guano, fish scrap, superphosphate of lime, and bone dust, are frequently used. It is common to sow the seed broadcast at the rate of one and a half to two bushels to the acre, but rye is as much benefited as wheat by drilling. The drill not only saves seed, but, by the ridges it raises and the more uniform and deeper planting of the seed, it guards the young plants against the severities of winter. The best time for sowing is in September, or early

in October, though good crops are sometimes raised when sown just before the ground is frozen up. If the early sown rye is too luxuriant, it may be grazed by sheep or calves, but care should be taken to leave a good covering for the roots. The true place for this crop is not in alternation with pasture to rob the soil of its fertility, but in a regular rotation of six or eight years, applying manure enough either to this, or the preceding crop to secure thirty bushels of rye to the acre. At present prices, it is not difficult to get a gross return of fifty dollars or more from an acre of rye, which is much better than twenty dollars, which hardly pays expenses. An additional reason for increased attention to this crop is the great appreciation of its straw. It is extensively used for bedding, for packing, and for paper making. The demand for this latter use has so increased in some districts that it is quite too dear to be used for litter. It frequently sells for \$15 per ton and upwards. Rye always brings good prices, and ought to have more attention from cultivators.

GRINDING CORN ON THE COB.—We regard this practice with no favor if the corn is good. Analyses of the cob of well matured corn show that it contains scarcely any nutriment. It was obviously not made to be eaten. The cob parts with all it can of nutriment to the kernels, and is no more fit to be fed out than sawdust. When immature corn nubbins, and ears that have not dried well in the field are to be fed, the case is different. The cobs of these contain a good deal of valuable food, and, if the ears be kiln-dried, they may probably be ground to very good advantage. Besides kiln-drying, if the temperature be increased nearly to scorching, will convert a portion of the tenderest cellulose which would soon harden to woody fiber, into a digestible substance like starch or gum. This can, however, seldom be done, hence it is best to break up the unsound corn with a hatchet into pieces an inch or two long and boil them, with the little potatoes and other feed for hogs.

Poke or Pigeon-berry as a Garden Plant.

Now that the Poke or Pigeon-berry (*Physalis peruviana*) is ripening its long clusters of purple berries, we are reminded of the excellence of its young shoots in spring. It throws up vigorous sprouts as large as one's finger, clothed with undeveloped leaves. These shoots cut when young and cooked like asparagus, are so nice that one who has once partaken of them is sure to wish for more. The supply depends upon the chance plants that may grow by the roadside or in the fence corners. Why not put it in the garden and make a permanent bed, as with asparagus and rhubarb? If the shoots are so good without cultivation, they are likely to be better with it, and the convenience of being able to get "a mess" without running all over the country will be great. Who will try what cultivation will do with a plant that has heretofore been despised as a weed? Those who are disposed to undertake its cultivation should take up the roots this autumn. Divide the large ones and set in rich soil, three feet apart each way. That plant has a medicinal reputation need not deter any one from eating it; whatever there may be active about the young shoots is entirely destroyed in the cooking. We have known those who have habitually eaten it for years without noticing any medicinal effects. In Europe the Poke is frequently grown in gardens for its showy character when in fruit.

Vinegar Making.

The remarks of Mr. I. D. G. Nelson, on vinegar making, at the American Pomological Society's meeting, have already been quoted in these columns; we now give an extract from a paper prepared by the same gentleman for the Indiana State Hort. Society, an association of which he is President. Vinegar may be made from inferior apples, but the better the fruit, the finer the product. Some think vinegar more profitable than selling the fruit. "My cider house is constructed with a view to convenience and economy in the manufacture of cider and vinegar, and is used for both alternately as the season requires. During the fall and until all the apples are ground up I make all the cider I can, and store it away in pipes, barrels, etc., under an open shed convenient to the cider house, where it will undergo vinous fermentation, and by the addition of a little good strong old cider vinegar it frequently gets quite sour before cold weather, and sometimes is fit for market by adding a little more strong vinegar. As soon as we are through making cider for the season, we remove the horse-power, (endless chain) grinder, pressing crib, vats, pomace boxes, etc., out of the basement of the cider house, and commence at once filling it with double and treble tiers of barrels of racked cider from the shed; start up the fire in the furnace, which is so constructed as to be out of the way when making cider, and the cider house is thus quickly converted into a cheap and excellent vinegar house. The thermometer is kept at about 75° Fahrenheit, and the process of vinegar making commences at once. If some of the casks appear a little 'lazy,' and not inclined to make vinegar as fast as they should, I take empty casks and put four gallons of the best vinegar in each, and drip slowly the contents of the sluggish casks, sometimes through hard wood shavings, but more generally over a board, into a dripping trough, then into the casks prepared as above—the object being chiefly exposure to atmospheric air, by reason of which it becomes acetified. Thus it is quite frequently the case that the laziest casks are first fit to go out of the vinegar house, which we remove, as well as all others, as fast as they are ready, to the cellars, where they remain until required for market, so that by the time the house is required again for cider making, all the old cider is converted into vinegar, and removed out of the way. The endless chain horse-power, cider mill, vats, etc., are put back in less than half a day, and the vinegar house is now converted into a cider house again, and the work goes on as before. The apples are scooped out of the wagon and thrown upon the upper floor, through a convenient door, when they run off on an inclined plain to such a part of the chamber as they are needed, or at once run into a hopper that feeds itself. The whole work is done with a small amount of labor, which is one of its chief recommendations. This is, in brief, my method of working up a few thousand bushels of apples, many of which were formerly wasted, or from which I realized a very insignificant sum. The same thing is within reach of any farmer who can command a few hundred dollars to start with, on a cheap scale, and out of which, if he has the apples himself, or can purchase them at a reasonable price, he may soon build up a lucrative and legitimate business, and at the same time be of permanent usefulness in furnishing consumers with a genuine article of healthful acetic acid to take the place of the poisonous stuff now in general use as vinegar."



TROTTING HORSE "DEXTER."—Drawn and Engraved for the American Agriculturist.

The shortest time in which a horse can trot one mile has been the subject of many trials, and for aught that now appears we are nearly as far from a solution as when "two-forty" time was made in 1824, and remained for ten years unsurpassed. It was not until 1839 that a mile was trotted by any horse in less time than two minutes and thirty seconds. Then Dutchman trotted in two minutes and twenty-eight seconds. From this time twenty years passed before the mile was made in less than 2 min. 20 seconds, Flora Temple going over the course at Kalamazoo, to harness, in 2 min. 19 $\frac{1}{4}$ sec. This astonished the world and all lovers of the horse, as it indicated positive improvement, either in the horse, in our management of him, or in both. This time of the beautiful mare, often called the Queen of the Turf, has never been beaten except by the noble horse whose portrait we give above, and until 1895 Flora may be said to have been without a rival. That year Dexter trotted on Long Island, under saddle, in 2 min. 18 $\frac{1}{2}$ sec., the next year at Buffalo, in 2m. 18sec. In 1897, he trotted against Ethan Allen assisted by a running mate, the latter winning the three heats, Ethan trotting in 2m. 15sec., 2m. 16sec., and 2m. 19sec., and Dexter, unaided, in 2m. 17sec., 2m. 18sec., and 2m. 21sec. Thus this wonderful horse surpassed his best previous time. Alone, Ethan never approached Flora's time. After this, the same year, Dexter trotted at Boston, in 2m. 19sec., and subsequently against time at Buffalo,

winning \$1,000, by beating his Boston time. The winning of this trot, in which he accomplished the mile in 2m. 17 $\frac{1}{4}$ sec., was the occasion of his sale to his present owner, Mr. Robert Bonner. It is worthy also of notice that the Buffalo track was 27 feet over a mile long. The sporting public witnessed the retirement of this horse, whose unprecedented power and speed gave such promise of a brilliant career, with great regret. In Mr. Bonner's hands he has had the best of care, and though horsemen were prepared to hear of great speed when his powers should again be tested, yet the announcement of his having trotted a mile in 2 min. 14 sec. taxed the credulity of almost every one. However, the fact is established by good evidence, and his sanguine trainer promises even better results before long. This trial of speed was made to gratify two well-known turfmen who happened to be present while he was trotted by his trainer. A running horse was made to join him during the astonishing performance, to excite his ambition, and induce him to do his best.

DEXTER is a gelding, and was foaled in Orange County, N. Y., in 1837; his dam is half sister to Mr. Bonner's famous gray mare, Peerless, and has in her veins some of the choicest English blood. His sire is Rysdyk's Hambletonian, in whom flows the famous Messenger blood. His color is brown, and his height 15 hands 1 $\frac{1}{2}$ inches. He was first trotted at 7 years old, a fact which has great significance, and which we

doubt not will tend to keep colts and fillies of tender years off the track, and check at least one marked barbarity of the race course.

Keeping Squashes.

Every one who grows squashes will have at least the Boston Marrow and the Hubbard. These may be taken as the types of autumn and winter squashes. The Hubbard is only in perfection when it has been kept into late winter or early spring, and by proper management the Marrow—in some points not excelled by any other variety—may have its season very much prolonged. Mr. Gregory, of Marblehead, Mass., well known as an authority on the subject of squashes, through his hand-book on the subject, (see our book list), directs that the squashes should be cut upon the approach of frost, and, if possible, have two days' sun to sear the cut stems; they are then to be handled as carefully as eggs, and each one laid down on a spring wagon and taken to winter quarters. The squashes are to be kept at a low temperature without freezing, and in a dry place. Mr. G. gives a plan of the house in which he stores his squashes for winter. They are laid upon bins arranged one above another, and the house is provided with a stove, in which a fire is made whenever there is danger of freezing. A dry cellar will answer for storing winter squashes, if the above named conditions are observed.

SMALL-LEAVED FUCHSIA—(*F. microphylla*.)

The Fuchsias.

Not many years ago it was rare to see a Fuchsia outside of the green-house, and only seldom some of the old sorts under the name of "Ladies Ear-drop," were cultivated as house plants. Now the number of species has greatly increased, while by hybridizing so many varieties have been produced that with many all trace of their parentage is lost, and they have become common plants in general cultivation. The leaves of the Fuchsia are usually of pleasing shape, texture, and color. Various shades of green are to be found among them, and they are often beautifully veined with crimson. The flowers, which come from the axils of the leaves, are most generally pendent; though in some species and varieties they are erect. This graceful hanging of the flowers suggested the old popular name of Ladies' Ear-drop. The green and more or less globular ovary is at the bottom of the flower, then a colored calyx, within this a row of differently colored petals, then long stamens, and a still longer pistil. The calyx and corolla often furnish marked contrasts of color, and we have a white calyx with purple or rose corolla, or these colors reversed. Great difference is presented in the length of the flower and its size, and there are several varieties that are finely doubled. The fruit is a berry, the seeds of which grow very readily. The stamens and pistils being very conspicuous and distinct, the operations of hybridizing and crossing are readily performed, and the Fuchsia is one of the favorite plants for experiment in the production of new varieties. The attempts at window cultivation of the Fuchsia are generally failures, for the reason that but few kinds bloom in the winter. A few days ago we were

called in by a friend who wished us to see what was the matter with his Fuchsias, and tell him what would make them grow. They had done growing, the wood was ripening and most of the leaves had fallen. Florists know how to treat the Fuchsia;—they give it a season of rest—but most other people think that it is the business of a plant in a pot to grow all the time.

When the plant has done blooming, put it out in the open air and let it ripen its wood; before frost, remove it to a cool cellar where it may

remain in a dormant state, with just moisture enough to avoid absolute dryness of the soil. In February or March repot in new earth containing plenty of leaf-mould, cut back the branches severely, and place in a warm room, and give water moderately. The young shoots will soon break in such abundance that usually a portion will need to be removed. The desired form may be given to the plant by pinching the new growth. A pyramidal shape may be made by keeping the lower branches the longest, or the plant may be trained to a frame or trellis. Nothing is easier to start from cuttings than the Fuchsia. The young shoots potted in sandy soil and covered with a glass, will strike root without artificial heat, and form good plants the same season. Our engravings give two species, well enough known to florists, but which are not common in general cultivation. The Brilliant Fuchsia (*F. fulgens*) has remarkably long, vermilion colored flowers, in clusters. It is one of the best for planting out, but like all the rest, should have a partial shade. The Small-leaved Fuchsia (*F. microphylla*), looks very much unlike the rest of the genus. It has small leaves and very minute flowers, and is altogether a very pretty plant. This is one of the few species that will bloom in winter.

Callusing Cuttings.

The propagation of plants by cutting is an operation in which some persons meet with uniform success, while with others, failure is the rule, and success the exception. We refer now to those cuttings made from ripened wood, such as the stems of grape, currant, quince, and of the roots of blackberry, Japan quince, and many other shrubs. When a piece of stem or root is severed, it, so to speak, puts forth an effort to make a new plant, and if the conditions are favorable, it generally does so. In the seed the root is provided for, the radicle pushes its way into the ground, and rootlets spring from it, all from the nourishment contained within the seed itself. The roots once established, the plant grows rapidly. In making a plant from a cutting, we have not everything in readiness for roots to start at once. Time is required for the cutting to accommodate itself to a new state of affairs. If a grape vine cutting be planted in a warm room with plenty of light, leaves may appear, and a short growth be made, when suddenly the plant withers, and the disappointed amateur takes up his plant and finds it has no root. The bud has been stimulated by light and heat, and all the nutriment the cutting contained has been expended in making a feeble shoot. Had the cutting been properly treated,

BRILLIANT FUCHSIA—(*F. fulgens*.)

the bud kept cool while the lower end was damp and warm, the result would have been different. When a cutting is placed under proper conditions it prepares to form new roots. It needs moisture and a low temperature. The nutritive matter in the stem accumulates at the place where roots are to appear, and forms a rough excrescence of a whitish color and a spongy texture, and when this appears, roots are quite (though not always) sure to follow. This excrescence is called the callus, and cuttings, on which it has formed, are said to be "callused." With autumn planted cuttings this process takes place in early winter, and the roots, if they do not form at that time, follow in spring. With many plants our winters are too severe, and the cuttings need to be buried below the reach of frost, or placed in earth in a cellar. Moss is better than earth for callusing cuttings. The peat or bog moss (*Sphagnum*), so much used for packing, has qualities which adapt it for this use. It is a poor conductor of heat, does not readily decay, and is very retentive of moisture. We some years ago accidentally left some cuttings of the Delaware grape in a box of damp moss, and found them nicely callused ready for planting. Cuttings of the grape, currant (if not convenient to plant in autumn,) of hard wooded ornamental shrubs, and of blackberry roots and other plants increased by root cutting, may be placed in a box of damp moss, which is to be put into a cellar where it will not freeze, nor yet get much above the freezing point. As spring approaches the temperature may be allowed to increase gradually, and by the time it is safe to plant, the cuttings will be found well callused, and in many instances with roots. The requisites are, proper moisture, a low but not freezing temperature, and darkness.

Forcing Strawberries.

The forcing of fruits, i. e., bringing them to perfection, by aid of structures and artificial heat at a period considerably in advance of their natural time of ripening, has been but little practised in this country. The reports which have gone abroad that strawberries in February and March bring \$4 a quart in our large cities, have induced several to ask about forcing. Four dollars a quart for strawberries sounds large, (though it is nothing to a guinea an ounce, the price that has been paid in London for the first fruit), but few think of the care and labor necessary to produce the quart of berries, or reckon the interest upon the necessary houses or frames. That this culture may be made profitable, we do not doubt, but we would not advise any one who has had no experience whatever with growing plants under glass to attempt it, other than as an experiment. A common hot-bed or a cold frame will answer for a first trial. When a house is used, the plants should be as near to the glass as possible, and for this reason the houses figured by Mr. Peter Henderson in his *Gardening for Profit*, are well adapted. In England, houses especially constructed for the purpose are used. Figure 1 shows one of these in which the glass is so arranged as to be directly over the shelves containing the plants. Figure 2 shows a section of a pit used in France for forcing. The pit is built of plank set in an excavation sufficiently wide to allow of a heavy coating of manure to be placed at each side. The plants are placed upon a stage to bring them near the glass, and the spaces between the pots are filled with moss. Below the stage are hot water pipes, *B, B,* in the figure, to supply heat when needed. The pit is 2 feet high in front, 3½ at the rear, and 4½ feet wide.

The variety chiefly employed around New York for forcing is the *Triomphe de Gand*; *Trollope's Victoria* is sometimes used, and near Boston an old variety, the *Cremont*, is a favorite

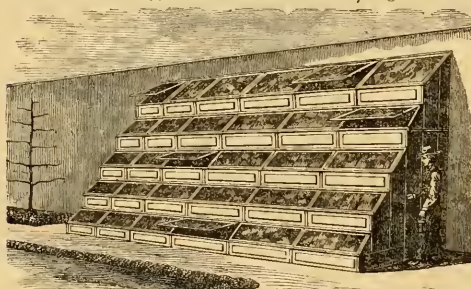


Fig. 1.—ENGLISH STRAWBERRY HOUSE.

with some growers. The best plants are those which were struck in pots from the first runners of last spring, and which have been gradually prepared for forcing by shifting them into larger pots as needed. In the absence of plants thus treated, good year old plants may be carefully taken up and potted. In either case the soil should be rich—at least one part of well-rotted manure to three of good loam—and the pots well drained by putting a few pieces of broken crock at the bottom. Set the pots close together and give water sufficient to keep the ground just moist. If soaking rains come on, turn the pots on the side or remove them to a shed. They are to be kept cool and free from injury by hard frosts, until wanted for forcing, and may be placed in a cool house or pit, when the weather becomes very frosty. About three

months are required from the time the plants are started until the fruit is ripened. The temperature should be gradually increased; 65° to 75° degrees being the proper range by day, which may sink 15° during the night. The soil in the pots is to be kept properly moist, avoiding over-watering, and the foliage is to be sprinkled occasionally. When the flowers open omit the sprinkling, and admit as much air as may be without lowering the temperature. When the fruit has set more water will be required. All deformed fruit is to be picked off, and that which is perfect is to be thinned, if more has set than can be well ripened. As the

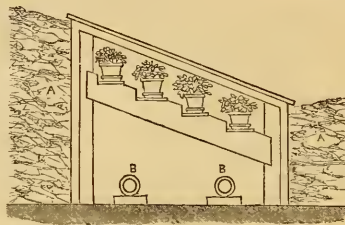


Fig. 2.—FRENCH FORCING PIT.

fruit ripens the house should be kept dry and well ventilated to perfect the flavor. In the absence of a house the pots may be placed in a hot-bed composed of a thick layer of dung and leaves, the intervals between the pots being filled with moss. The proper temperature is to be maintained by ventilation, and if the heat falls, as it is likely to do, linings of fresh manure are to be placed around the bed.

The Management of House Plants.

Some of our correspondents think we should give more attention to those plants that are cultivated in dwellings. Perhaps we have of late neglected this branch of horticulture, and will endeavor to make amends. There are two ways in which people go wrong in starting their stock of house plants. Some wait until winter has fairly set in, then, thinking that some plants would make their rooms look more cheerful, go to a green-house and procure a lot of nice, healthy looking subjects, being careful to select those in bloom, or at least well furnished with buds. The plants are taken home, and in two or three weeks they are sorry looking things, the buds have fallen, the leaves are withered, and the whole in a bad plight.

The plants in their transfer have been placed in totally different conditions as to heat, light, moisture, and almost everything essential to their growth. Some will worry through it, and after a severe struggle, accommodate themselves to the change, while others will succumb. Another mistake is made by those who have plants in the borders during summer, which they expect to keep in the house in winter. The plants are left out until the occurrence of light frosts give notice that cold weather is at hand, then they are hurriedly potted, and taken at once into the house. Very few things will stand this treatment. Plants in being lifted, however carefully, will have their roots disturbed, and more or less broken, and it takes them some time to recover; they should be taken up while there is yet growing weather,

carefully potted, and pruned to diminish the evaporating or leaf surface, and shaded a few days until they recover. When the plants are taken indoors, put them in a room without a fire where they can have plenty of air on mild days, and thus be gradually habituated to their change. The general treatment of the plants we will defer until later, and enumerate a few things that almost any one can succeed with. If we could have but one pot-plant it would be Ivy; to be sure it does not bloom, but its rich green is better than many poor blossoms. It grows with the greatest ease, will stand all kinds of abuse, though it will repay good care.

The *Calla* (*Richardia* *Ethiopica*) is of easy culture and fine in flower and flower. Chinese Primroses are good window plants. The seed should have been sown in spring, but plants may be had of florists. Among the things that are kept by all dealers in green-house stock, those that occur to us as doing well in ordinary house culture besides the above, are: *Cypripedium ignea* (wrongly called *C. platycentra*); Geraniums, especially the Sweet-scented, and the Ivy-leaved; Chinese Roses; Epiphyllums, often called Crab's-claw Cactus; Agave; Cycas; Verbenas; Pelargoniums; Wax Plant; Heliotrope, etc. These are all plants of moderate light, among the taller shrubs of house culture are Orange, Lemon, Myrtle, Pittosporum, Abutilons, Daphne Odora, Laestadius, and with special care, Camellias and Azaleas. Among annuals, which may be raised from seeds sown at once, are Mignonette, Candytuft and Nemophilas. The plants should be thinned to three in a six inch pot. Several of the bulbs may be flowered in the house; these are to be potted as described in the article on bulbs. The list of house plants might be much increased, but more are enumerated above than any one person would be likely to grow. Many who have quite a stock of window plants have raised them from cuttings, or slips, which have been given them by friends. To the real lover of plants those thus raised from the beginning are inexpressibly more valuable than any that can be bought. With many house plants, it is an easy matter to grow them from cuttings; if slips are put into light soil and not exposed to the sun for some time, they will take root and grow. Others require more care; the cuttings need to be covered with a glass; a jar of some kind or a glass shade will do. This should be removed and wiped every day, and as the cuttings begin to grow, lift the edge of the glass and give more air. Camellias, Azaleas, and such things, it is useless for the amateur to try to propagate. The general and especial management of the leading plants will be treated of another time.

Hardy Bulbs.

Under the head of hardy bulbs come the Tulip, Hyacinth, Crocus, Crown Imperial, Lilies, etc. These may be grown as florists flowers, the choicest varieties selected, cultivated with the greatest care, and, except the Lilies, taken up each summer and replanted in autumn; or they may be grown as everybody's flowers—planted and let alone for several years. The tulip or hyacinth fancier needs no directions from us. To those who have never cultivated bulbs we say, do not bother with the catalogues; send to a dealer of good reputation the sum appropriated to bulbs—tell him you wish the best for general culture, of assorted colors, and you will be much better served in quantity and quality than if particular varieties were speci-

fied. When the bulbs are received, lose no time in planting them. They may be in separate beds, or in clumps in the borders. Deeply spade the soil, which is all the better if sandy, or trench it, working in a plenty of old cow manure, and plant, the distance apart and the depth being governed by the size of the bulb. Hyacinths may be put 8 inches apart and 4 inches deep; tulips a little less. Crocuses should be 2 inches deep and about the same apart, Lilies, according to their size, one to two feet apart, and four inches deep. The bed when planted will be a little above the general surface, but will settle during the winter. When the ground is about to freeze, throw a covering of straw manure or other litter, over the bed, which is to be left until spring. Besides the bulbs enumerated above, the Scillas, Snow-drops, Bulboceodium, Narcissus, Jonquils, and hardy Gladioluses, are to be similarly treated, and to be planted at a depth proportioned to their size. These bulbs may be grown in pots, but they must not be hurried. To get them to bloom well the bulbs must be well rooted before the bud pushes to any great extent; to this end they must be kept dark and cool, but beyond the reach of frost. Prepare a light, rich soil of good loam and cow manure, and if not light, add sand. Place an inch or so of broken crock in the bottom of the pot, and put in the soil and pot the bulbs, which in the case of Hyacinths and Polyanthus need not be more than half covered. Place the pots in a cool, dark cellar, or make a rough frame of boards to contain them, and cover with several inches of coal ashes or tan. It is safe to invert a small flower-pot over each bulb, before putting on the ashes or tan. The object of this is to prevent breaking the bud in uncovering, in case it should have started. In about six weeks the pots may be brought into a warm room. The bulbs may also be grown in boxes.

Laurels and Hollies from the Woods.

The past summer we saw in the grounds of Mr. A. S. Fuller, Ridgewood, N. J., some remarkably successful attempts at transplanting Laurels or Kalmias. Plants four or five feet high, taken from the woods this spring, were making a vigorous growth. As Mr. Fuller is one of those who have no horticultural secrets, we learned how it was done, but as the treatment was original with him, it was proper courtesy to allow him to make it known. As he has published his method in the Horticultural Recorder, we feel at liberty to commend it to our readers. In early spring the plants are taken up with as little injury to the roots as possible, and every branch is cut back about half its length; they are set out, and if dry weather comes on a mulch is put over the roots. This treatment removes all the foliage from the plant and leaves a most unpromising looking stick. Have patience and the stick will "break" in an astonishing manner, and put forth an abundance of shoots which will form a good head by autumn, and probably flower the next year. The Laurel (*Kalmia latifolia*), one of the most beautiful of the broad-leaved evergreens is rare in cultivation—the uncertainty attending the removal of good sized shrubs having discouraged planters from the attempt. True, plants may be had at the nurseries, and imported at that, but they are so small that one must wait many years before they get large enough to be enjoyed. In looking over some manuscript of the late Wm. N. White, of Georgia, we find that he had hit upon the same treatment for our

native Holly (*Ilex opaco*). He states that by removing all the leaves the plants may be got out with success. A holly hedge would be both a barrier and an ornament; the slow growth of the plants raised from seed and the difficulty of removing large ones in the ordinary way, have deprived us of the services of a plant that every lover of hedges has wished to use. We hope that our friends in the Southern States where the Holly abounds, will try this treatment and report the results.

Horticultural Wonders.

It asks that we are not the only editors who are seemed to explain phenomena which have no existence. The editor of the London Journal of Horticulture received such minute accounts of a remarkable freak of nature, a cluster of apples growing on a plum tree, that he made arrangements to go a hundred and fifty miles to see it. Before he started he heard from another correspondent, who had investigated the matter by means of a ladder, and found that a branch of shrivelled apples had caught in the plum tree or had been placed there by design. These wonders are easily unravelled by one who does not want to be deceived. Near Lake George, a remarkable tree is pointed out to travelers, the stage stopping to let the passengers see the phenomenon of a tree half elm and half maple. Any one of ordinary perception can see that two seedlings started side by side, and crowded one another so closely as to apparently form one trunk. The application of proper force would show that there is not the slightest union between them. A large gall has appeared on the grape vines in unusual abundance this year. It is an inch or more in diameter, and looks not unlike a small green apple. Upon being cut open it shows the grubs of the insect which made it nicely encased. This has been sufficient foundation for the story of a hybrid between the apple and the grape. A vine growing over an apple tree happened to have these galls, and without investigation people who ought to know better, promulgated the wonder of a hybrid of the apple and the grape.

An Enemy to the Wistaria.

Early in July we found that the Wistarias had been attacked by some insect which cut the leaves and turned over a flap, as shown in figure 1. Upon returning after an absence from home of a few weeks, we found the vines almost entirely stripped of foliage, and upon examining the few remaining leaves, we found our enemy much grown and snugly hidden in a shelter made by drawing two or three leaves together by means of strong silken threads. Reference was had to



FIG. 1.—WISTARIA LEAF. Harris' Insects, and it was found that we probably had to do with the Tityrus Skipper. (*Eudamus Tityrus* of Fabricius; *Gonoloba Tityrus* of Doubleday.) The larva, fig. 2, is about 2 inches long, of a yellow-

ish green, with darker transverse markings, and a chocolate colored head, upon which are two large yellow spots looking like enormous eyes.

The caterpillars are

not seen by day, as they remain quietly housed, but they are active enough after dark, and one, by examining the vines



Fig. 2.—CATERPILLAR.

with a light, will see the leaves disappearing at a most alarming rate. The caterpillar transforms to a chrysalis either on the vine or in some secure place, and in the following summer appears as a very active butterfly, which is from 2 to 2½ inches across, with brown wings. The first pair of wings has a semitransparent band across them, and the second pair is marked with a broad silvery band on the underside. This insect is described by Harris as being particularly destructive to the Locust. There are other nearly related species which have similar habits, and ours cannot be absolutely identified until we hatch the butterfly. As the larvae are so perfectly sheltered it is not likely that any applications would destroy it. It fortunately manifests its presence before much damage is done, and can readily be disposed of by going over the vines and pinching the leaves wherever they are folded, as shown in figure 1.

A Rose with Single and Double Flowers.

A correspondent sends us a drawing and an account of a rose-bush, one portion of which produces single and the other double flowers. This is an instance—by no means rare—of what the gardeners term a "sport," and what Mr. Darwin in his work on "Variation of Animals and Plants Under Domestication," calls "Bud Variation." In this remarkable work are collected numerous cases of this kind, and the subject is discussed at length. That plants vary from seeds is well known to every one; a bud is in a manner an individual embryo plant, a highly developed seed, so to speak. The bud can be removed from the parent plant and be inserted in another and grow, and in some instances it will grow, if put into the soil, like a seed. The branch produced from a bud sometimes produces a growth quite different from the plant from which it springs, and presents distinct characters, which may be perpetuated by cuttings. In this way some of the choice florist's varieties have been obtained with the rose and many other plants. A white moss-rose has produced a red one, and a moss-rose has, by bud variation, given roses totally destitute of "mossiness." The well-known rose Safrano, in this way produced the more beautiful Isabella Sprunt. We have given instances in these pages of some remarkable variations in grapes, and some of the beautifully variegated Pelargoniums are sports from other varieties. Peach trees have produced nectarines, and certain branches of cherry trees have borne fruit ripening much later than the rest on the tree. These things are not common, but sufficiently frequent to be of value to the florist and pomologist, and we hope our readers will communicate any such instances as fall under their observation.

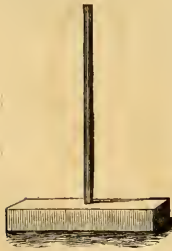
BOXES FOR PROTECTION.—A box made by tacking boards together, open at both ends, and of a height proportioned to the plant to be covered is often useful to protect tender things in winter. It is put over the plant and the open spaces filled with salt hay or other elastic material.

Treatment of Lawns and Grass Plots.

Many people think that the one thing requisite to produce a good turf is to sow a particular kind of seed. There is, to be sure, a choice in grasses, and we have in former articles indicated our preferences. But whatever kind of grass is sown, good keeping will tell. Frequent rollings and mowings with occasional top-dressings will make a good turf with most perennial grasses. The roller is an important implement in keeping a lawn in order. Where the mowers are frequently used this is not so necessary, as these implements have a roller attached; but where, as in many places, the mowing is done by a scythe, the roller must be brought into use. Every person who crosses a lawn makes the surface uneven; where a path is worn, it is a pretty sure indication that a walk is needed, and it is best to make one at once. Promiscuous trampling of a piece of grass, large or small, especially if just after rain, leaves it in a bad condition for mowing, whether by machine or by hand. Wherever hand mowing is practised, roll the grass the day before. This removes all inequalities of the surface of the soil, and the grass will recover during the night and be ready to take the scythe. Many perennial grasses, as well as the clover, form a turf by throwing out runners, which root at the joints. If the lawn be mowed without rolling, much will be cut off, which, had the roller been used, would have been pressed into the soil and taken root.

Large lawns are really easier to manage than grass plots, such as we find in village and town yards. With these last the mowing is often delayed and the stronger varieties of grass, or if the plot is all of one kind, the stronger shoots, smother the weaker. Let any one mow a neglected lawn or grass plot and he will find, if he mows as he should, within an inch of the soil, that the remaining leaves of grass are all dead and that the runners have but little hold. It would be in most cases impracticable to use a roller on small grass plots. These can be levelled by the use of the Turf Beetle. The shape of the implement is shown in the engraving. It is a piece of 3-inch plank of a length and width proportioned to the views of the operator. We use one about 3 inches thick, 10 inches wide, and 1½

foot long. It is operated like a pavior's rammer, and one, after a little practice, can make a grass plot smooth and level. Where the plot is small a grass-hook, a sickle without teeth, is used in preference to a scythe. Weeds will establish themselves if not pulled while young. Thistles, plantains, and other coarse weeds are easily removed while small. Barn-yard grass or Cock's-foot (*Panicum Crus-galli*), is apt to appear late in summer, and be troublesome. It is a coarse annual, making clumps of such vigorous growth that it kills out the finer grasses near it. It should be pulled up as soon as it can be distinguished.



TURF BEETLE.

The implement here figured is useful in laying turf, as by its aid not only a level surface may be secured, but the roots of the turf will be brought into close contact with the soil below.

STARRY SCABIOUS.—(*Scabiosa stellata*.)

Winter Bouquets.

Bouquets of Everlasting flowers, as they are called, are pleasing or the reverse, according to the care that has been given to collecting and preserving the flowers, and the taste displayed in making them up. Most of these unfading flowers bloom late, some, such as the Helicrysums, coming into perfection just at the time of hard frosts. With the majority of these plants it is best to pick the flowers before they fairly open, remove the leaves from the stems, tie them in small bundles, and hang them, flowers down, to dry in the shade. If too many are put together there is danger of mildew, and it is moreover difficult to keep the stems straight. The Globe Amaranth (*Gomphrena*), should not be picked until the heads are well developed and feel papery. If in making up, the natural stems are not managable, or if the flowers become broken off, as they are apt to be, artificial stems made of slivers of broom corn may be attached by means of a thread or fine wire. Seed-vessels of various kinds are introduced into these bouquets with good effect. A species of Scabious (*Scabiosa stellata*), is sometimes cultivated for his use, under the name of Starry

Scabious. We saw this old but not very common plant some time ago in the garden of Mr. Vick, at Rochester, and were so pleased with its appearance in fruit that we had an engraving made of it. Each seed-vessel is surmounted by an expanded and prettily marked calyx, and which holds its shape and beauty when dry. It is an annual and may be readily raised from the seed.

A NEW LAWN PLANT.—Or rather an old and well known plant put to a new use. In France it is found that the common Yarrow or Milfoil (*Achillea Millefolium*) makes an excellent lawn. With us it occurs abundantly as a weed. That it will make a lawn is asserted on good authority, and such is its hardness that it will grow in places too dry for grass to flourish well upon them. We are assured that in the city of Paris there are velvet lawns made of this plant which have remained of a fine green through a drought of two month's duration. We hope that some of our Southern readers will try it. Nothing is said of the time of sowing, but we presume it may be sown in fall or spring as most convenient. The seed is already or soon will be ripe.

The Movements of Plants.

That plants possess the power to move spontaneously, is well known to those who have watched those flowers and leaves which go to sleep at night and wake up in the morning. The spontaneous movements of climbing plants have been illustrated in a former volume, and the Sensitive Plant affords a marked illustration of rapid motion when irritated by the touch. More striking than these, because more rarely witnessed, are the singular ways of the Moving Plant, *Desmodium gyrans*, a native of the East Indies. A friend who was so fortunate as to raise some plants from seed, sent us a specimen, the motions of which have been watched with great interest. The engraving shows one of the leaves of half the natural size. It is a com-

pound leaf, with one large terminal leaflet, and two small lateral ones. When the weather is sufficiently warm, the smaller leaflets will rise and fall by perceptible jerks, and at the same time perform a gyratory movement, while the larger leaflet will occasionally turn itself as if to see that the little fellows are doing their duty. This movement continues day and night, sometimes with only one leaf, then with several, and does not seem to depend upon any external condition, other than that the plant shall have sufficient heat for its healthy growth. What purpose is served by these motions, or how they benefit the plant, is not easy to see. The plant is sometimes called *Hedysarum gyrans*, but the best authorities place it in *Desmodium*, of which we have several native species, with adhesive seed-pods, known as Tick-Trefoils.



MOVING LEAF.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Sea-side Fare—The Quahog—(Round-clam).

As stated last month, the Quahog of New England is called Clam, or Round-clam in New York, and southward. Quahog or Quahaug, is an Indian word, and we like to see the aboriginal names preserved; besides the animals are so unlike that it is absurd to call them both clams. Figure 1 gives the shape of the shell, which is quite different from that of the clam given last month. While the shell of the clam is thin, this is thick and very flinty. In some localities the shells are nearly white, but generally they are bluish or lead-colored. Qua-

the liquor for a portion of the soup. Placing over a brisk fire and roasting in the shell, like oysters, is a favorite way of cooking with many. Young and tender Quahogs make a delicious pie. They should not be larger than an old-fashioned penny when boiled out, and be made into a savory pie with the addition of salt-pork, seasoning, and sometimes veal is added. Chopped and mixed with a batter of flour and eggs, they are fried in fritters, or in crumbs, by dipping first in egg and then in finely powdered cracker, and frying quickly to a nice brown. Quahog chowder in New England, (clam chowder in New York), is a dish of great repute, and each chowder maker thinks he can make it better than any one else. It seems to be one of the few forms of cookery in which a gentleman may indulge, and many a one well known in commercial or professional life prides himself on his ability to make chowder. The essentials of a chowder are quahogs, pork, potatoes, hard-bread, and an old-fashioned iron pot, with a close fitting cover. Other things may be added, but these are essential. Place slices of fat pork in the pot, and slowly fry it until rather crisp, and then take it out, put in some quahogs (clams), a layer of sliced potatoes, some broken hard bread, and some of the fried pork, cut in small pieces, using pepper at discretion, go on with alternate layers in the same order, until enough has

The sliced roots may be used for flavoring soup, or peeled and sliced they may be stewed until tender, and served with cream, salt, and pepper, or a sauce made with flour and butter. Boiled whole and sliced when cold, it is excellent dressed as a salad.

TOMATOES, though not among the less known vegetables, are capable of being cooked in so many ways that we must notice them in their season. Many prefer them simply peeled and stewed, with plenty of butter, but cooked only just enough to fairly heat them through. Others stew them, rub them through a sieve, and stew again until reduced to a thick pulp. We like both these ways; they give two distinct flavors. The last mentioned manner of cooking gives a rich sauce to serve with meats of any kind. But we wish to give some of the less common modes of cooking tomatoes. Peel the fruit, cut it up and let the juice drain from it; put into a buttered pan with bread-crumbs, butter, salt and pepper, and bake for half an hour in a quick oven. This is called scalloped tomatoes, and if tried once, will probably be repeated. Broiled tomatoes are relished as a novelty. Cut large ones in two cross-wise, put them on a gridiron, cut surface down; when well seared, turn, put a lump of butter, with salt and pepper on each one, and cook with the skin side down until done. Baked or stuffed tomatoes are excellent; large fruit is required; wash and wipe each one, and with a sharp knife cut out a good sized plug at the point where the stem was attached, being careful not to cut through the lower surface. This cavity may be filled with a lump of butter, a mixture of butter and bread crumbs, using salt or pepper, or with any kind of meat chopped very fine, highly seasoned and mixed with plenty of butter. Put the tomatoes thus prepared in a pan and bake for half an hour, or until well browned.



Fig. 1.—THE QUAHOG—(*Venus mercenaria*.)

hogs are found on muddy bottoms, on or near the surface, and are taken by rakes or by "treading out." The fishermen wade at low tide and pick them up as they are felt by the feet. When opened, the appearance, figure 2, is very different from that of the clam. The snout is inconspicuous, the "belly" or body is the most prominent part, and to this is attached a somewhat triangular appendage, the foot, by the use of which the animal is enabled to slowly move from place to place. The drawing is taken from a boiled animal, as the parts show more distinctly than in the raw one. Quahogs differ in size from that of a half dollar to nearly as large as one's fist, and like oysters and other shell fish, their tenderness and flavor differ with age and locality. Being in season when oysters are not good, great numbers are eaten raw. The modes of cooking are various; a primitive shore style is to wash the shells thoroughly, put them into a pot without water, and cook until the shells have opened. A considerable amount of water is contained within the shells, and is given off in cooking. The animal is then readily picked out from the shell, and

been put in the pot. Add water, in which a little flour has been stirred, enough to cover the materials, (do not use too much thickening), cover the pot and cook slowly until the potatoes are done. This is the general outline which admits of variations. The quahogs, if large, are cut in several pieces; some pour out the pork fat and substitute butter; onions thinly sliced, are often used; a red pepper broken up is an essential ingredient with some; tomatoes are sometimes added, and wine even forms a portion of the compound. No definite rules can be given for making a chowder—it being a dish that allows for a display of art—but however made it is a most savory and popular compound.

The Cooking of Vegetables.

CUCUMBERS to most people are only known as a vegetable to be eaten raw with vinegar, and whatever other condiment may be liked. The writer happens to be fond of them cooked, especially fried. Cucumbers grown rather too large for eating raw are the best. Pare and slice lengthwise, dip in batter or in egg, and then in pounded cracker, and fry as directed last month for egg-plant. We have eaten stewed cucumbers, but never cooked them. A correspondent at Shawnee Town, Ill., sends the following way of doing them, with the remark that cooked thus, they are more palatable and healthful than when eaten raw. "Pare and slice 2 or 3 common sized cucumbers, put them in a shallow vessel with half a teacupful of water, which has previously been seasoned with salt and pepper, stew them until soft; then add a large spoonful of fresh butter, or fried meat gravy, not lard, also 2 or 3 large spoonfuls of rich, sweet cream. While stewing, the vessel should be covered and stirred occasionally. Try it." Others use equal parts of cucumbers and sliced onions, fry them first in a little butter and then stew, seasoning with cayenne pepper.

CELARIAC OR TURNIP-ROOTED CELERY.—This is a variety of celery with a large root, and is found in our city markets wherever there is a large German population. It is altogether too good a thing to be confined to the German or any other people, and those who like celery at all will do well to grow it, as it is less trouble than the ordinary kind.

A Handsome Flower Stand.

At one of Mr. Whitlock's weekly exhibitions, a stand was presented by Mr. C. L. Allen, Florist of Brooklyn, N. Y., that was noticeable not only for the beauty and tasteful arrangement of the flowers it contained, but for the workmanship of the stand itself. Rustic stands are often coarse in mate-

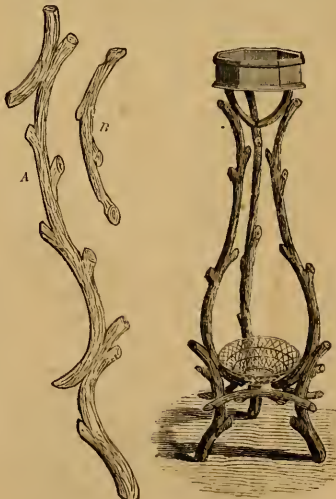


Fig. 1.—FLOWER STAND.

Fig. 2.



Fig. 2.—QUAHOG OUT OF THE SHELL.

may be eaten with whatever seasoning is fancied. This is a ready method of opening Quahogs to cook in other ways. To open them raw, a blunt knife is placed where the shells meet, and is struck a smart blow with a stick; the muscle which holds the shells together being severed they spring apart, and the animal may be taken out. Soup may be made of Quahogs opened in this way, in the same way that oyster-soup is made; with milk, butter, pepper, and thickened with cracker. A much richer soup is made by boiling out the Quahogs as above mentioned, chopping them fine and using

rial and in construction; this, while it has much the effect of rustic-work, is neat and more in keeping with the furniture with which it would be surrounded in the parlor. Figure 1 shows the stand as it appears when empty. Above is an octagonal box which contains a zinc pan that may be filled with earth, and used for growing plants, or may serve to hold cut-flowers. When used for the last named purpose, a convex zinc cover is placed over

the pan; this is perforated with numerous holes through which the stems of the flowers are thrust. The pan in this case, of course, contains water. Below is a wire basket which can be lined with moss, and hold a pot of Ivy, the stems of which may be entwined around the legs of the stand.

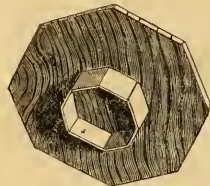


Fig. 3.—TOP OF STAND.

The legs are of the shape given in fig. 2, A; they are first sawed out of a black walnut plank, and then worked into a rounded shape by use of the drawing knife, spokeshave, or even a jack-knife. The shape of the chryseid cross pieces near the bottom of the stand is shown at B, figure 2. After the pieces are rounded, a "rustic" appearance is given to the work by lining it with shallow grooves by means of a small gouge, such as is used by wood-carvers. The whole is finished by oiling it with linseed oil. When the stand is not occupied by flowers, Mr. Allen converts it into a useful article of furniture by means of the circular top, figure 3. This has a projection to fit into the upper part of the stand in place of the zinc pan. Any one who is at all handy with tools can readily make this really pretty article of furniture from the engravings we have given.

Household Talks.

BY AUNT HATTIE.

Almost every housekeeper fancies that her way of making pickles is the best, at any rate, I for one must plead guilty to the charge, for certainly I do think my mangoes and the way I manage my 6-gallon churn crock cannot be beaten. Some few years ago, I came across an old-fashioned churn which suited my ideas of a pickle crock admirably, as it was tall and narrow. The lid was lost or broken, and it was chipped a little on the bottom, but did not leak, however. Being useless as a churn without a properly constructed lid, the storekeeper made a reasonable deduction from its original price. It has always been my mango crock, every has been full every fall and invariably empty every spring.

About the time of early frost, I take every muskmelon I can find of suitable size and kind. The smaller, greener, and smoother skinned, the better. I never use those larger than a goose egg, nor any rough skinned ones. For materials for stuffing I procure a quantity of small, round, green tomatoes, two or three heads of cauliflower, as many small cucumbers as possible, radish pods, nasturtiums, and carrots, in fact, any kind of vegetable that will make pickle, including small button onions.

From each melon I cut a slice or square, according to fancy, and take out the pulp and seeds, reserve the lid with each, and set on one side until all are done; then I stew the tomatoes, peel the onions, and cut the cauliflower into small branches leaving a head to each little stem, scrape and slice the carrots, etc. When all are done, place a few melons on the bottom of the crock, filling in the spaces with the prepared ingredients, and so on until the crock is full. By using a little care in preparing, a less quantity of brine will be needed; this will apply also as regards vinegar. To two gallons of boiling water add a pint and a half of salt and a piece of alum as large as a butternut, and as soon as dissolved pour over the mangoes and let them stand three or four days, when they will be ready to pickle. During this time I make ready the spices and vinegar needed. A darning needle and white darning cotton will be needed to secure the lid of each mango, after it is filled. Then I shall want 6 quarts of the best cider vinegar, $\frac{3}{4}$ of a lb. of mustard seed, 2 ounces of allspice, $\frac{1}{2}$ an ounce of mace, a root or two of ginger, green is best, two or three peppers, and a tablespoonful of pounded alum. I reject cinnamon and cloves, from sour vegetable pickle, and reserve them for sweet fruit

pickle—there is method in all things, even in pickles. In five days at the longest, take the vegetables from the brine, wash in clear spring water, and let them drain an hour or two; then fill each melon with a pleasant variety, such as an onion, a piece of cauliflower, a cucumber, a small tomato, a slice of carrot, and one teaspoonful of mustard seed, adjust the proper lid, secure it with the needle and thread, and fill each one in the same way. When all are filled, put a few on the bottom of the crock with the lid uppermost, and fill the spaces with any ingredients remaining over, and so on until the jar is full. Boil the vinegar with the alum and spices before mentioned, and any mustard seed not used in the filling, and pour boiling hot over the whole, and they are ready to put away for winter use. Do not tie the spice in a bag, but allow it to arrange itself among the mangoes. This pickle will keep any length of time the family will allow.

It may be thought of savor of vulgar taste, but I assure you that every one of our household, Edward especially, is fond of pickled onions, and it is an invariable rule with me to do up a bushel and a half every fall; and I have never found that quantity more than enough to supply our wants. In former years it has been a serious matter to get such a quantity in proper condition for pickling, and many were the tears shed over the jacket stripping process, but I am happy to say that tears and stained fingers as respects onions, are things of the past, for they are quite unnecessary. With a sharp knife, cut off neatly the top and bottom from each, and throw into a tub or crock, and pour over them a boiling lye made of wood ashes. It should be as strong as possible. Most of the skins will come off immediately. I have never repeated the process, but I suppose if the first lye was removed, and fresh poured over, no further trouble would be needed; as it is, with me it has been necessary to use a knife in removing some of the skins. They should be well washed from the lye before handling. When ready, pour over a little stronger brine than that used for the mangoes, say 1 quart of salt to two gallons of water, without alum. Let them stand a week, when they may be washed and drained for a few hours, and boiling vinegar poured over them, spiced as for the mangoes, or if more convenient, with red peppers alone, as they are really a spice in themselves. Do not forget to add the alum, however, as it is necessary to restore them to their original crispness. The middle of October is the best time to make this pickle.

I have also a 3-gallon crock known by the name of the pear jar. It is devoted to a sweet pickle, made of pears, seasoned with sugar, vinegar, cinnamon, and cloves. Just before pears are fully ripe, I peel the desired quantity and boil until tender in a syrup made to my taste—say one and a half to two pounds of sugar to one quart of vinegar. I boil a few at a time, and when all are done, cover with boiling syrup and put away for use.—My 4-gallon peach crock is filled nearly every fall with peaches done very much in the same way as the pears. I sometimes omit to peel them, in which case I insert 3 or 4 cloves into each. But little prepared syrup is necessary, as a great deal of juice is formed from the peaches themselves.

Yes, quite an array of crocks, but then not half as many as used in some families. Here is the ripe tomato crock, the small cucumber, the mango, the onion, the peach, the pear, the preserved lb. for lb. damson crock, the plum pickle, and the large green cucumbers stuffed and pickled exactly as the muskmelons; they are nearly as good, some prefer them. The higgdom jar, the pickled cherries, and here is the ripe cucumber sweet pickle, and the ripe watermelon rind, both made alike, the latter the nicer, however, as it is more tender and of better flavor. But I must tell you how to make it as it is excellent, but I did not show you my stuffed large peppers, or my green tomato mangoes, both filled with sliced cabbage seasoned with mustard, and then my sliced green tomato and onion, just the season for making it now as the frost, if there is any, does not injure the tomatoes materially. But enough—let us go to the melon pickle. Take the rind of ripe watermelon, peel

and cut into slices, and pack in a jar, pour in over them a little vinegar or salt and water. I prefer the vinegar. In 24 hours, boil until tender in a syrup made of 2 lbs. of sugar to one quart of vinegar spiced with cassia buds or cinnamon and cloves as preferred. Boil a few only at a time, and when all are done, pour over the remaining syrup. If not enough to cover well, make a little more.

Higgdom is made of vegetables—generally green tomatoes and onions chopped fine, and salted for a few hours. Drain thoroughly and place in a jar. Pour over boiling vinegar, spiced with mustard, allspice, and peppers; strain before pouring over.

A Neat and Durable Tidy.

An engraving is here given of a tidy which is easily made, is very pretty when done, and which can be washed and done up to look as good as new. The materials required are spool cotton thread, No. 12, and a frame 14 inches square, which can be readily made of half-inch strips. Upon the outer edge of each side of the frame are cut

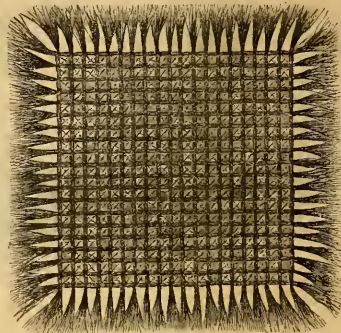


Fig. 1.—THREAD TIDY.

twenty notches, half an inch apart, beginning two inches from the corner. At each of these notches the frame is wound with thread, using from ten to fifteen turns, as the tidy is wanted heavier or lighter. When the frame has been wound in one direction, then wind the cotton in the same manner the other way. If the notches have been properly placed, the threads will cross at right angles, dividing the body of the tidy into squares.

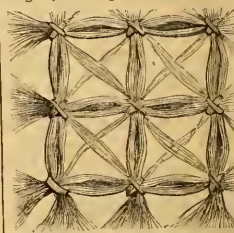


Fig. 2.—PORTION OF TIDY.

Then take a needle with doubled cotton and tie the crossed threads, as is shown in figure 2. Commence at one corner and tie the thread fast, pass it diagonally across the square, pass the needle around the threads where they cross and tie a single knot. The whole is to be tied over in one direction, and then in the opposite. Figure 2, which shows some squares of the natural size, will enable the construction to be readily understood. When all the tying is done, cut the threads where they pass around the frame, and the fringe is formed. After washing and starching, it should be stretched in shape and pinned out to dry. Is not to be ironed.

HERBS FOR WINTER.—Tying aromatic herbs in bunches, and hanging them in a garret or other place until needed, is not the best way to keep them. After drying, place the herbs near the stove for a short time, remove and cool, when they can be rubbed to a moderately fine powder between the hands, leaving only the useless stems. Keep the powdered herbs in well stopped bottles properly labeled. Every housewife should have sage, thyme, summer savory, and sweet marjoram.

BOYS & GIRLS' COLUMN.

The "Philosopher's Stone."

It was long supposed that gold could be made by art. Some of the wisest men spent large fortunes and devoted their whole lives in trying to discover the process. They hoped to acquire enormous riches by fiddling out the secret. Their belief was that all metals are made of nearly the same ingredients, that silver and gold contained the same elements as iron and lead, but freed from impurities. Those engaged in seeking the art of transmutation, as it was called, were named alchemists. The substance by which they hoped to effect the change from the base to the finer metals they described as the "Philosopher's Stone." Many curious anecdotes are related concerning the alchemists. It is said that a certain king in India, who believed in alchemy, was marching with his army across a shallow stream, and that when all had passed, it was discovered that one of the fetters on an elephant's foot was changed to gold. It was immediately concluded that the "philosopher's stone" must be somewhere in the stream, and coming in contact with the iron, it had made the wonderful change. The king, hearing of the occurrence, at once halted his army and had a large ditch dug above the place, to carry away the water, so that the bed of the stream could be searched. When it was laid bare, men were employed to pick up the stones found there and rub them upon a piece of iron. As fast as they proved worthless they were cast away into the water beyond. They worked this way for days, and it is said they became so accustomed to giving a rub and a throw with each stone, that although one fellow came across the very stone they were seeking, which turned his iron into gold, yet away it went with a jerk, like the rest, from mere habit, and although they spent a long time in searching for it, it could never be regained. If the author of this fable meant to teach that we should be careful not to throw away opportunities lightly, lost a golden one slip by unobserved, he conveyed some truth by his narration. Several stories are told of strangers appearing in various places, and after successfully performing the experiment of changing lead into gold, leaving with the promise of coming back in a short time; but there is no account of the promise ever being kept. Here, again, the truth seeker will discover at least a golden maxim, not to trust to promises when present performance is possible. Many tricks were played off by impostors on those who believed in alchemy. Sometimes they used a melting pot with a false bottom; at the real bottom they placed a quantity of gold or silver, or some of their compounds. The melting pot being placed in a very hot fire, they put in a little lead, and stirring it as it melted, also broke away the false bottom. Then when the crucible was cooled, the finer metal which had been concealed would be found. Some persons still think that the time may come when the secret of gold making will be discovered, and that the alchemists were not far from right in believing that all metals are but variations of some one primary substance. Whether the theory be true or not, it is certain that the experiments and researches of alchemists have not been entirely in vain. By their means many useful chemical mixtures were discovered, and much valuable scientific knowledge gained to the world.

Pious Thieves.

Travelers in Russia state that one of the ornaments of their houses is a "holy picture" of the Madonna or some saint, which is found among all classes of the population, even to the remotest part of the immense empire. These pictures are held in great reverence, and every person entering a room containing one is expected to remove his hat and cross himself devoutly. They are rightly considered quite a safeguard, for thieves hesitate to steal where such a picture is present. Some cunning rogues, however, have managed to make their depredations and ease their consciences; several instances are recorded where houses have been robbed, but the holy pictures were carefully covered by a cloth, so that the saint might not be shocked by, or interfere with, the inquiry being done by the pious thieves in its presence.

Robinson Crusoe's Island.

"How I would like to live like Robinson Crusoe," many a boy has said after having read the interesting account of him written many years ago by Defoe. Some young readers have taken pains to look for his island, Juan Fernandez, on the map, and a few can tell something of the general character of the place at the present day. All, however, do not know these particulars; one writes to enquire about them, and for the benefit of those who would like to be informed, we give the following brief account. The Island of Juan Fernandez is in the South Pacific Ocean, about 400 miles west of the coast of Chili,

to which country it belongs. It is 15 miles long and 6 miles wide, the coast being irregular, so that it contains only about 65 square miles. It is a rugged, mountainous region, but contains many pleasant and fertile valleys. Its principal mountain is nearly 4000 feet high. It is occupied by a colony of fishermen, numbering about 50 persons, who hire it from the Chilian government. The climate is very healthful, and the soil fertile, producing abundant crops of grain and fruits, such as apples, strawberries, melons, figs, etc. Valuable woods, as sandal wood, the cork tree, etc., grow wild. Wild goats abound in the rocky districts, and fish are plenty in the adjoining waters. The place is frequently visited by vessels to procure a supply of water, though we believe there is no regular line of communication. In 1704 Alexander Selkirk, a Scotchman, who was sailing master of an English privateer, was set ashore there at his own request, and remained in solitude, "monarch of all he surveyed," for five years. He was provided with plenty of clothing, arms, ammunition, etc., so that he did not suffer from want. His adventures are supposed to have been the foundation for the story of Robinson Crusoe, but there are good reasons for believing that Defoe received his idea of the book from the published account of a Spaniard wrecked on an island in the Caribbean Sea, near the mouth of the Orinoco river, where he lived alone for many years, being finally taken off by a passing vessel.

An Honest Miner.

A Cornish miner living at Camborne, was unable at one time to pay his rent, and his little stock of furniture was seized to be sold to satisfy the demand. He applied to a lady, well known in the district for her charitable deeds, for a loan of three guineas. "I know nothing of you; you may be a drunkard or an impostor," were the disheartening words that met his application. "Madam," replied the miner with energy, "I am neither, and if you will lend me the money I will return it in four months." The money was lent, the time for payment came round, and the miner who by great exertion had managed to get the money together, set off on foot to pay his debt. On his way he had either to cross a small river, or lengthen his journey three miles to pass over a bridge. He chose the former, but miscalculating the depth of the water, lost his footing and was drowned. When the body was recovered, his wife said he had three guineas with him for the lady who had lent that sum. His pockets were searched, and no money found, but some one noticed that his right hand was firmly clenched. It was opened, and there were three guineas which he had firmly held.

The Monk Outwitted.

It is related that a monk living in Peru, by his gambling practices, got into great difficulties in money matters. The native Indians in his vicinity were much attached to him, as he was of a kind and generous disposition, and they frequently sent him presents. One day, when he had lost largely in gambling, an Indian promised to assist him, and the next evening brought him a large box full of silver ore. The present was several times repeated, and the monk very naturally was anxious to discover where the precious metal was procured. He pressed the Indian so closely that at last he consented to conduct him to the mine. Accordingly one night several Indians came to his house, blindfolded him, and each by turn carried him for some distance into the mountains. At length the bandage was removed and he found himself in an opening in the rocks, surrounded by bright masses of silver, and was permitted to take as much as he could carry. While the Indians were conducting him home again blindfolded, he unfastened his rosary, and dropped the beads at intervals along the path, hoping by their aid to find his way to the mine again alone. In the course of an hour or two his Indian friend knocked at his door, and giving him a handful of beads said, "you dropped your rosary on the way, father, and I have picked it up for you." This was the last visit he was allowed to make, the Indians jealously keeping the secret from strangers.

The Disabling Clerk.

One rainy day when little was being done by the clerks at Stewart's up town store, an elderly man stepped in and asked to see some sheeling. The young man behind the counter of that department, who had recently been employed there, laid down a piece for inspection. "Let me look at another," said the gentleman. The clerk leisurely replaced the first piece and handed down another. This did not suit, and more was asked for, and as the clerk was about replacing the goods already shown, the customer requested that it be left, that he might compare it with other pieces. After several more pieces had been looked at, one seemed to suit his wishes, but to make sure of its quality he took hold of one end and carried it nearer the light. "Hold on, old man, none of that," cried the clerk, sharply; you can buy goods here

at the counter, if you want them." He did not like the trouble of folding up the goods again. "I guess you'd better step down to the cashier's desk and get what is owing you," quietly remarked the supposed customer, who was Mr. Stewart himself. "You are too careful of yourself to do business for me." There was nothing left for the indolent and disabling clerk to do but settle his accounts and leave. The lesson was severe, and one which will probably be lasting in his own case and also in that of his fellow clerks who saw the transaction.

Arithmetical Curiosity.

Ask a friend to write three numbers, consisting of the same number of figures, no matter how many, one under the other; tell him you will add two numbers to them, and that you will inform him how much the amount will be when added, as soon as he will write his first number. For example your friend writes 87388; you immediately announce that the sum of the five numbers will be 287396, no matter what he may put down for his second and third numbers. Suppose him to write for the second and third lines 43531 and 63198; you will write under them 56178 and 56901, and on adding will find the amount previously given to be correct. Of course you must know what to take for the fourth and fifth numbers. These may always be found at once, by subtracting the figures of the second and third lines from the number nine, and setting down the remainder. The answer you can find from the first line of figures only, in this way: place the figure 2 before the first line, and subtract it from the last figure of the line. By placing the numbers given above in the form of a sum in addition, the whole working may be readily seen. Practice well so that you may go through the operation without hesitation before exhibiting, and those unacquainted with the secret will be surprised at the result.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the September number, page 337. No. 331. *Puzzle Picture.*—It brings to mind the "wall of the tide" (*deaf*). No. 332. *Puzzle Picture.*—The man can get down safely on his knees, where there is plenty of it. No. 333. *Illustrated Riddle.*—Bee knot under our nest over loud or over shoe in ever tank; or Be not over earnest, over loud or over sure in your talk. No. 334. *Metagram.*—Power, Power, Tower, Sower, Rower, Mower, Cower, Dower. No. 335. *Word Puzzle.*—The word is "Insatiable" (*In-sat-i-ate*). The following have sent in correct answers to puzzles, etc. Isaac T. McLean, Apollon Dyer, A. G. Smith, Fannie Barrett, Leah A. Meedling, Mahala Yartman, T. Taylor, "Kansas Boy," Annie Clark, Albert H. Palmer, J. Milton Snyder, (as usual), James A. Johnson, Sylvester P. Hull, C. A. McCarthy, Samuel M. Edwards, Horace Elliott, Mima M. Walker, Lillie L. Mills, Sarah Dowland.

New Puzzles to be Answered.

No. 336. *Metagram.*—A word of four letters often follows horses over the farm; change the first letter it will act 1st, like the wind; 2d, like fire; 3d, like water; 4th, like a poor horse.

Brown and Brooks went out hunting Brown, killed Brooks deliberately, Was Brown guilty of manslaughter?

No. 337. *Law Question.*—A decision to it is wanted.



No. 338. *Illustrated Riddle.*—For the idle to remember.

No. 339. *Enigma.*—A certain article has one arm, never travels, goes on one foot, is intended especially for dry places, but is most frequently used in the water. It is a favorite with dancers, but not with intemperate persons.

There is said to be only a slight difference between a rye face and a bourbon face; both are quickly read.



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THE PET BIRD.—Drawn and Engraved for the American Agriculturist.

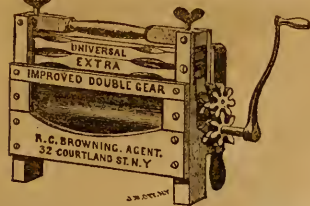
A bird kept in a cage is a painful sight to any one having fine feelings. It may be well cared for, may sing sweetly and apparently enjoy its captivity, perhaps be really happy, but it *looks* like a prisoner, and that gives an unpleasant impression. But no such thought is suggested by the pet bird in the picture. Its cage is its home, not its prison. The little girl is not a cruel jailer, but a friend whom the bird loves well. It understands the kindness she has shown it, and may well feel happy in the light of such a sweet smile. Birds kept in this way, allowed to leave the cage, and made familiar by petting, are cheerful and amusing companions. To train such creatures successfully, they should be taken when young, and gentle treatment will entirely deprive them of fear. Even wild birds may be taught to confide in a friend. Those who daily scatter crumbs for their benefit will soon be recog-

nized and greeted by flocks of grateful songsters. Numerous instances have been related of wild robins, wrens, sparrows and other birds becoming attached to persons who have fed them regularly. Surely there will be more pleasure in winning the love of one bird by gentleness and kindness, than in slaughtering a hundred in wanton sport.

Unexpected Answers.

At the Home Mission in this city are gathered hundreds of neglected children from the streets, to be fed, clothed, and cared for. Occasional treats of fruit, Thanksgiving dinners, etc., are given to them by benevolent friends. On such occasions there are numerous visitors, some of whom usually address the children, and endeavor to impart wholesome truths. On one occasion, a speaker wished to illustrate the nature of *faith*. He asked, "Children,

what are you going to have soon?" "Watermelons," responded a chorus of voices. "How do you know?" "Seen 'em in the cellar," shouted the children. The speaker, who expected to hear the answer, "Our teacher told us so," and thus to show the nature of faith, found himself nonplussed for a moment, his illustration having been thus amusingly spoiled.... Another teacher endeavored to illustrate faith thus: "Children, if I should tell you that one day I saw a monkey climbing a liberty pole, would you believe me?" "Yes, sir," unanimously. "Well, that is faith; you believe me because I say it, and you feel sure I would not tell an untruth." The next day, the question was asked of the same children, "What is faith?" "A monkey climbing a liberty pole," answered a quick little boy, who had not quite mastered the idea, but had remembered the illustration.



THE UNIVERSAL CLOTHES WRINGER, with ROWELL'S IMPROVED DOUBLE GEAR, cannot be surpassed or equaled by any other wringer for durability, till the expiration of the patent for the "STOP GEAR," or fastening above the cogs, which prevents them from entirely separating.

Any sensible person can understand that a cog-wheel wringer, having cogs *whether at one or both ends of the roll*, which can play apart and fly out of gear when a large article is passing through, is *COMPARATIVELY* WORTHLESS, as the Cogs are then of no aid when most needed.

The UNIVERSAL WRINGER was awarded the Gold Medal of the Great New England Fair, took the First Premium at the National Fair at Washington, also at the State Fairs of every Northern State, and is the only wringer which ever took a first premium at the Fair of the American Institute.

Its sale (now over \$50,000 wringers) is greater than of all the other wringers combined. It is very durable and every Universal Wringer is warranted.

A supply of wringers, also of the celebrated DOTY WASHING MACHINE, always kept for shipment at Cleveland, Chicago, St. Louis, Louisville, and New Orleans. Sold by dealers generally.

R. C. BROWN, Gen. Agent,
32 Courtland St., New York.

WANTED—THE READERS OF THE AGRICULTURIST must know that we are publishing a Magazine of Rural Life, at Indianapolis, Ind. and Chicago, Ill., called the **WESTERN FARMER**, which is the handsomest Farm Journal in America, and the largest, save one. That it is printed on fine book paper, splendidly illustrated, and handsomely bound in Magazine style each month. This paper is just closing its third year with the widest circulation ever attained by any similar Journal in the West, and with a popularity such as to insure it an immense success next year. It is a first-class original Western Magazine, conducted by five Western men, and filled with matter from the pens of practical writers, who understand this great section and its needs.

Subscription only \$1.50 a year, and a copy of the **HOME COMPANION** (price 25 cents) presented to each subscriber free. We also give the last three numbers of this year to those who subscribe before November 1st. We want Agents everywhere, and will give better terms than any publisher in America. Sample copies, with full particulars, subscription papers, etc., sent free to all who send stamp for postage.

WHAT THE PEOPLE AND PRESS SAY OF IT.

Gen. T. A. Morris says: "It is the finest agricultural paper in America." Col. D. G. Rose says: "I unhesitatingly pronounce it the finest and most instructive paper of the kind I ever saw."

Gen. James S. Negley, of Pennsylvania, says: "It is not excelled by any similar paper in America." Hon. A. J. Holmes, Secretary of the Indiana State Board of Agriculture, says: "It is an honor to our State, and of more value to her people than any paper now published." A. A. Graham, agent at Berlin, Ohio, writes: "Yours is the most popular paper among farmers I ever saw."

Others of the Press: "It is altogether the finest looking paper we have seen, and for ability, interest, or usefulness, it has no superior in this country."—*Western Christian Advocate*.

The North Western Farmer has the highest and heartiest endorsement of any rural Journal ever published in the West, and it will deserve it. It has no superior East or West.—*Cincinnati Gazette*.

Now is the time to get a **Piano, Hand Loom, Sewing Machine, Dictionary**, or some other valuable premium on easy terms. Try it. Address,

North Western Farmer Co.,

57 State St., Chicago, or
19 North Meridian St., Indianapolis, Indiana.

PENNA. STATE NORMAL SCHOOL, gives a thorough English education. Cheap, Systematic, Practical. Both sexes received.

Address, J. A. COOPER, Edinboro, Pa.

RILEY'S EARLY RASPBERRY—The earliest Red Raspberry known. Now first offered to the public. For history, description, and testimonials, send for (enclosing stamps) our *Manual of Grapes and Small Fruits*. Address J. H. FOSTER, Kirkwood, N. J., who has the culture.

EARLY ROSE potato for sale *low*, and also a full stock of Small Fruits.

CATTLE PLAGUE.

WARREN CHEMICAL MANUFACTG CO.,

Distributors of Coal Tar,

4 Cedar St., New York.

Manufacture and keep on hand, Carbolic Acid and Heavy Oil of Coal Tar, for disinfecting Cattle Cows and Yards, and for general use in treating the Cattle Plague, as recommended by the Metropolitan Board of Health, and Cattle Plague Commission.

AMERICAN WALTHAM WATCHES

350,000 of these Watches are now speaking for themselves in the pockets of the people—a proof and a guarantee of their superiority, and furnishing the best reason for their great popularity and justifying the preference uniformly shown them by the public.

AN EXPERIENCE of nearly fifteen years has furnished the AMERICAN WATCH COMPANY the opportunity of thoroughly testing all really valuable inventions in Watchmaking; and it being the sole aim of the Company to produce watches which as time-keepers would bear comparison with the very best made anywhere, they now confidently assert that the WALTHAM WATCHES have every improvement which time and experience have proved valuable.

THE AMERICAN WATCH CO. desire specially to remark that having had the refusal of all the contrivances designed to prevent damage to the trails by the breakage of mainsprings,

FOGG'S PATENT CENTER-PINION

was adopted for that purpose as the best, and faultless.

WALTHAM WATCHES are now supplied with Patent DUST-PROOF CAPS, protecting the movement from dust, and greatly lessening the necessity of frequent cleaning, &c., an improvement of very great value to watch-wearers whose watches are exposed to rough usage and constant wear.

THE DIFFERENT GRADES OF WALTHAM WATCHES have frequently been submitted to the severest tests to determine their time-keeping qualities, and have invariably been found thoroughly reliable and accurate, receiving the strongest endorsements from railway engineers, conductors, and expressmen, the most exacting class of watch-wearers—and a **TRACER OF FIFTY YEARS** HAS SUFFICIENTLY PROVED THEIR DURABILITY.

THERE ARE many kinds, grades, sizes, and descriptions of Watches made by the Waltham Company, adapted to the tastes and means of all classes; but the Company's written guaranty accompanies every watch that bears the Company's name, and should be required of every seller.

No Watches retailed by the Company.

ROBBINS & APPLETON, Agents.

No. 183 Broadway, New York.

WALTHAM WATCHES.

For a few months past we have advertised the above Watches at *reduced* prices, and the result has been most satisfactory. Our plan has been to sell the genuine WALTHAM WATCH, in Gold, Gold or Silver Cases only, and at a very small profit, giving the purchaser every opportunity of examination and comparison, and with the understanding that if the Watch does not prove satisfactory, it can be exchanged or the money refunded.

These Watches are, without exception, the most perfect specimens of fine mechanism ever produced in any country. Each and every part is made by machinery of the most delicate and elaborate construction.

Compared with foreign watches, they possess many advantages, excelling not only in principle and finish, but still more in their reliability as time-keepers. As an indication of the prices we submit the following:

Silver Hunting Watches, \$18.00
Gold Hunting Watches, 18 karat case, \$20.00
Gold Hunting Watches, Ladies' size, 70.00

We often receive orders direct from our advertisement, but prefer that every one should see and first our descriptive price list, which explains all the different kinds, tells the weight and quality of the cases, and gives prices of each. This we will forward to any one on application, and it will be found very useful in making a selection.

Every Watch is warranted by special certificate from the American Watch Co.

We send them by express to any address, allow the purchaser to open the package and examine the Watch before paying, and if not perfectly satisfied, it can be exchanged or the money will be cheerfully refunded. Please state that you saw this in the *Agriculturist*.

Address, in full, **HOWARD & CO.,**

No. 619 BROADWAY, NEW YORK.

PRINCE & COS.
ORGANS
AND MELODEONS.
43,000 now in use.
BUFFALO, N.Y. CHICAGO, ILL.

WALTHAM WATCHES. C. O. D.

A GREAT SUCCESS.

In consequence of the great success attending our system of selling genuine Waltham Watches to persons in remote parts of the country at less than New York City prices, we invite the buyer's careful attention to our list of prices:

Hunting Case Watch in 3oz. Silver Case, \$18.00
The same Watch in 3oz. Silver Case, 35.00
The same Watch in 4oz. Silver Case, 22.50
The same, Extra Jewelled, \$2 additional
The same, Extra Jewelled, with Chronometer Balance, \$1 additional.

The Silver Cases are warranted equal to gold.
The Watches to be sent by Express, ACCOMPANIED BY THE AMERICAN WATCH COMPANY'S CERTIFICATE OF GUARANTEE.

THE BUYER TO HAVE PRIVILEGE OF EXAMINATION IN POSSESSION OF EXPRESS COMPANY.

Purchasers are requested to compare our prices with that asked for expensive, metal imitation watches, of no value, and which find a market solely because the buyers are entirely ignorant of their quality.

Address must be plainly written, and purchaser must pay Express charges.

M. E. CHAPMAN & CO.,
No. 47 Liberty Street, New York.

HERALD OF HEALTH, FREE.

Those who subscribe for the Herald of Health for 1893, now, shall have the Oct., Nov. and Dec. Nos. of this year free. We are now printing so many valuable articles that no family can afford to be without it. For 20 subscribers and \$2.00, we send a Wheeler & Wilson Sewing Machine worth \$25.00. Send for it at once. Address, MILLER, WOOD & CO., 15 Laight St., New York.

Extract from a Letter from J. T. KILGORE, Clinton, Dewitt Co., Texas.

August 11th, 1893.

Messrs. JAMES BUCHAN & Co.,
Gentlemen:— "Mr. Jno. Taylor, near Yorktown, dipped 1,500 head of sheep in contents of one bag. Only thirty died. It cured the ticks and scabs, and screw worms, healed up the sores, and generally made the flock look 100 per cent better, at a cost of about 14 cents per head. Mr. T. informed me about 180 head were in very bad condition, maimed and bruised, nearly all troubled with the screw worm, and the dipping cured up all the sores, &c. In the absence of other remedies I had resorted to the use of the Carbolic Soap, and now that I am not, I am literally beset with demands for it. It is the thing."
Yours &c., J. T. KILGORE.

MOUNT LEBANON GRAPE.—A New and valuable variety. Send for our circular of Novelties, which gives history, description and testimonials. Originated by the Society of Shoppers, Mt. Lebanon, Pa., and by them placed in our hands for propagation. Address J. H. FOSTER, Kirkwood, N. J. We have a complete stock of all Small Fruits, and stamps for our *Manual of Grapes and Small Fruit Culture*.

B. T. BABBITT'S

ARTICLES OF EVERYDAY USE.

B. T. Babbitt's Lion Coffee,
B. T. Babbitt's Labor-Saving Soaps,
B. T. Babbitt's Celebrated Concentrated Potash Soap Powder,
B. T. Babbitt's Saleratus,
B. T. Babbitt's Star Yeast Powder.

For Sale everywhere. Ask your Grocer for B. T. Babbitt's preparations, and take no other. I guarantee them to be PURE and UNADULTERATED.

B. T. BABBITT,

64, 65, 66, 67, 68, 69, 70, 71 and 72 Washington Street, and 43 and 44 West Street, New York.

PROSSER RASPBERRY—Sometimes (but unjustly) called Kingington. We warrant our stock genuine. It has all the necessary qualities to place it fully as high as the *Clarke*, which is now looked upon as a standard variety. Send for our circular of Novelties. A full stock of all kinds of Small Fruits. Send stamps for our *Manual of Grapes and Small Fruit Culture*. Address, J. H. FOSTER, Kirkwood, N. J.

WHITE CLUSTER BLACKBERRY—A superb berry in all respects, and so to make up a standard fruit. Of a beautiful Cream color. Perfectly hardy and vigorous. For history, description, and testimonials, send for our circular of Novelties. A full stock of all kinds of Small Fruits. Send stamps for our *Manual of Grapes and Small Fruit Culture*. Address, J. H. FOSTER, Kirkwood, N. J.

You want Martha!

The best and most valuable white grape. As Victoria, heartiness, and productive, and in days earlier, than Concord. Quality best, both for table and wine. Send stamps for Illustrated Catalogue of over 50 varieties to GEO. W. CAMPBELL, Gettysburg, Ohio.

Any Clothes Wringer having the double friction of cogs at both ends, which can play out of gear when most needed in wringing a large lot cannot be durable. The UNIVERSAL has not objections.

EARLY ROSE,

LOW. Send for Circular. Address J. H. F. Kirkwood, N. J., who grows 25 acres of Small Fruits.

The Northeastern Farmer is published singly at Indianapolis & Chicago. See Adv't on

Dutch Bulbous Flower Roots.

Sent by Mail, Post-paid, at Catalogue Prices.
B. K. BLISS & SON,
No. 41 Park Row, & 151 Nassau-st.,
New York,

(Old Office of the American Agriculturist.)

Offer for sale a large and well selected assortment of the above, including all the most desirable varieties in cultivation.

The following varieties will be sent by mail, post-paid, upon receipt of prices affixed. Selection of varieties to be left with us. When less than the specified number are ordered, an additional price will be charged.

<i>Myaculth</i> , double or single, fine named varieties.....	Per doz. \$2.50
<i>Myaculth</i> , double or single, fine unnamed varieties.....	1.50
<i>Myaculth</i> , <i>Prislan</i> , double and single, mixed.....	1.50
<i>Tulips</i> , early double, fine named varieties.....	1.50
<i>Tulips</i> , early double, fine mixed unnamed.....	1.50
<i>Tulips</i> , early single, fine named varieties.....	1.50
<i>Tulips</i> , early single, fine mixed unnamed.....	1.50
<i>Tulips</i> , <i>Parrot</i> , fine named, unnamed.....	1.50
<i>Tulips</i> , <i>Bybloemen</i> , bizarres and rose, fine named.....	3.00
<i>Tulips</i> , <i>Bybloemen</i> , fine mixed.....	1.00
<i>Tulips</i> , various sorts mixed, unnamed.....	75
<i>Crocus</i> , mixed, blue, white, yellow, and striped.....	25
<i>Crocus</i> , finest named varieties.....	40
<i>Polyanthus Narcissus</i> , finest named varieties.....	2.50
<i>Polyanthus Narcissus</i> , fine mixed unnamed.....	1.50
<i>Iris</i> , English, fine mixed varieties.....	4.00
<i>Iris</i> , Spanish, fine mixed varieties.....	75
<i>Ranunculus</i> , fine mixed varieties.....	50
<i>Anemones</i> , fine mixed varieties.....	50
<i>Glaadiolus</i> , hardy fine mixed varieties.....	1.00
<i>Snowdrops</i> , double.....	60
<i>Snowdrops</i> , single.....	50
<i>Hyacinthus</i> , fine mixed varieties.....	50
<i>Japan Lily</i> , red and white, each 50 cents.....	5.00
<i>White Lily</i> , (<i>Lilium candidum</i>).....	1.75
<i>Lily of the Valley</i>	2.00
<i>Lilium longiflorum</i>	2.00

Collections containing a fine assortment of all the leading varieties of the above will be mailed post-paid, as follows: Collection No. 1, \$2.50; No. 2, \$10; No. 3, \$30.00; No. 4, \$30.00. For the contents of each collection and further particulars, see Catalogue.

Also a fine assortment of GREEN-HOUSE BULBS, comprising CYCLAMENS, IRIAS, OXALIS, SPARAXIS, TRITOMAS, ACHEMENSES, GLOXINIAS, &c., &c.

Particular attention is invited to their

New Illustrated Autumn Catalogue,

(containing an accurate description of each variety, with particular directions for culture, so that any person, however unacquainted, cannot fail to succeed, also a beautiful colored lithograph of the celebrated *Lilium Auratum*.) which will be mailed to all applicants enclosing ten cents. Orders may be addressed to B. K. BLISS & SON,

Box 5,712, P. O., New York.
Or, Drawer No. 11, Springfield, Mass.

LILIAM AURATUM.

The Japanese Queen of Lilies.

We have a fine stock of this gorgeous Lily in splendid condition, many of which are of a larger size than any hitherto offered. A correspondent of the *London Times* has the following remarks regarding this, the most magnificent of modern floral introductions:—*Lilium Auratum*.—This golden-rayed Queen of Lilies is the most beautiful of the Lily family. It is perfectly hardy; and for the adornment of the Flower-garden, the Conservatory, and the Sitting-room, it is unrivalled. The whole English floral world, on its introduction, was jubilant with delight, hailing its advent as an astronomer would the discovery of a star of the first magnitude; and in every city, both in Europe and America, it has received ovations such as would have been dear to the heart of the most ambitious prima-donna or the most successful conquering hero."

Specimens were exhibited the past summer in England, 6 to 8 feet in height, with from 50 to 75 flowers. It is perfectly hardy—having stood the past winter in Massachusetts, with a slight covering of straw. A beautiful two-page lithograph, colored true to nature, will be found in our new Bulb Catalogue—which will be mailed to all applicants enclosing ten cents.

Flowering roots sent by mail to any address upon receipt of price.

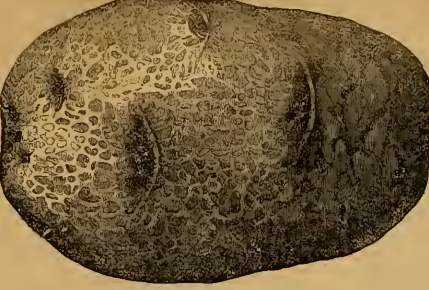
Extra size, \$2.00 each. No. 1, \$1.50 each; \$12 per dozen. No. 2, \$1.00 each; \$9.00 per dozen.

A liberal discount to the trade.

B. K. BLISS & SON,
41 Park Row, & 151 Nassau-st., New York.
P. O. Address, Box 5,712 New York.
Drawer No. 11, Springfield, Mass.

WOLF CREEK NURSERY—50,000 Cherry, (30,000 E. May), 20,000 Apple and Pear, Standard and Dwarf, 50,000 Apple Stocks, Extra Pear and Quince and a variety of Trees and Plants. Our E. May Cherry is (we think) the finest in the world. Come and see, or get Catalogue free. **JOHN WAMPLER**, Trotwood, Ohio.

ONE-HALF THE AVERAGE SIZE.



EARLY ROSE POTATO.

Be Sure and Get the Genuine.

B. K. BLISS & SON,

Nos. 41 PARK ROW and 151
NASSAU ST., NEW YORK,

(OLD OFFICE OF AMERICAN
AGRICULTURIST.)

We offer for sale a fine stock of this valuable Potato, grown expressly for us from the original stock. The experience of the past season fully confirms all that we stated in favor of this variety when we first offered it for sale last spring. Well-ripened tubers have been exhibited, grown in eight weeks, in the open ground, and we have abundant testimony from many growers to the fact that it has matured *two to three weeks earlier than any other variety*, of superior quality, and *enormously productive*, yielding from **400 to 500 bushels to the acre**.

A *Silver Medal* has been awarded us by the Massachusetts Horticultural Society, and special prizes at various other State and County Agricultural Societies, which, with the many favorable reports received from our Customers in various parts of the country, authorize us in recommending it as the *earliest, most productive, and best flavored variety in cultivation*. It is particularly recommended for culture in the Southern States, as new potatoes of this variety can be sent to the New York market as early as the more common varieties from Bermuda.

The following from a few of our correspondents will confirm what we have said.

Messrs. B. K. Bliss & Son—Gentlemen: I have this day tried on my own table, the Early Rose Potato, I find it to be of the first quality, and have no hesitation in pronouncing it one week or more earlier than the Goodrich, Early, and Gulls as productive.
Yours ever,
BOSTON, August 26, 1868.
CHARLES DOWNING.

Messrs. B. K. Bliss & Son: The Early Rose Potatoes are dry, mealy, and of excellent flavor; in fact, the best early potato I have ever eaten, and I have tested most of the varieties for many years.
Yours Respectfully,
NEWTON, August 29th, 1868.
HENRY VAN DUSEN.

Messrs. B. K. Bliss & Son: I planted nearly a peck of Early Rose Potatoes (this spring). They have fully answered my expectations, being large, fair, productive, early, and of good quality. I had no means of exact comparison with the Goodrich, but am satisfied that they are decidedly earlier.
Truly Yours,
PITTSFIELD, Mass., August 30th, 1868.
W. M. ALLEN.

Messrs. B. K. Bliss & Son: "I purchased of you last spring 2 pounds of Early Rose Potatoes. I gave a friend two potatoes, leaving me three; those I planted, from which I have this day dug *two bushels and three quarters*."
Yours truly,
SOUTH WILBRAHAM, Mass., August 31st, 1868.
E. L. WELLS, Deane St. Stephen's Church.

"Last spring I invested two dollars in one pound of Early Rose Potatoes—planted May 20th, and dug Aug. 20th 143 **1-1** lbs.—many of which weighed $\frac{1}{2}$ of a pound, and the whole crop the largest potatoes I ever raised."
J. M. SETHS,
MILFORD, Conn., July 4th, 1868.

"I have Early Rose Potatoes as large as goose eggs, while the Early Goodrich are only as large as buttons, both planted same date, April 15th."
W. M. ALLEN.

"The Early Rose Potatoes I got from you are really early and fine. I planted May 4th, and took up July 10th 98 pounds of potatoes from one pound planting. They were perfectly ripe at that time, and might have been dug two weeks earlier for the table."
HENRY CLATTON.

We shall be prepared to execute orders from Oct. 1st to Dec. 1st, at the following prices:

One Pound, \$1.	Three Pounds, \$2, by mail, post-paid.
One Peck, \$5.	Half Bushel, \$8.
One Barrel, \$10.—60 lbs.	One Bushel, \$15.

Cash to accompany the order. Price to the trade in larger quantities will be given upon application.

Caution.—In consequence of the great demand for this variety last year, a spurious variety, which strongly resembled the Early Rose in appearance, but greatly its inferior in every respect, was widely disseminated, and will doubtless be offered again this fall. Beware of spurious varieties.

In consequence of the danger from frost in spring, all potatoes designed for early planting should be ordered in the fall. Potatoes will be delivered at the Express Offices, Boat, or Railroad Depots in New York City free of charge.

We also have on hand a large stock of *Early Goodrich*, *Sovereign*, *Dukeman*, *Harrison*, and other leading varieties, at lowest market prices, a Descriptive Priced List of which will be mailed to all applicants.

Address, **B. K. BLISS & SON, Box 5,712, P. O., New York City.**

Or, Drawer No. 11, P. O., Springfield, Mass.

IMPORTED Dutch Bulbous Roots AND JAPAN LILIES FOR THE TRADE.

Our WHOLESALE LIST, as above, for the Autumn of 1868, is now ready for mailing to **DEALERS ONLY.**

J. M. THORBURN & CO.,
15 John-st., New York.

Genesee Valley Nurseries
ROCHESTER, N. Y.
FALL OF 1868.

FROST & CO. offer for sale this Fall a very fine stock of

Extra sized Standard and Dwarf Pears.
Cherries and Plums,
Also a large assortment of SMALL FRUITS, GRAPE VINES, EVERGREENS, DECIDUOUS ORNAMENTAL TREES AND SHRUBS, ROSES, HEDERACES, GREEN-HOUSE AND BEDDING PLANTS.
Send 25 cents for descriptive catalogues Nos 1, 2, & 3. Wholesale catalogues for Nurserymen, Dealers, etc., mailed on application.
Address
FROST & CO., Rochester, N. Y.

STEPHEN HOYT & SONS,

New Canaan, Conn.,
Offer to the Trade for the Fall of 1868, a large nursery stock, consisting in part of Apple and Peach trees: Van Buren's Golden Dwarf Peach; Clarke's Philadelphia, Brinkley's Gravenstein, Elm City, and Double Black Cap Apples; Early Wilson, Kittatunga, Lawton, and Missouri Mammoth Blackberries; Concord, Hartford Prolific, Delaware, Diana, Iowa and Larelli's grape vines; Apple Seedlings, one and two years old. We invite correspondence, or better, personal examination of our stock. Sample sent by mail or Express when desired.
RASPBERRIES, BLACKBERRIES, ROSES,
Grape Vines, &c., &c. Sent for a Catalogue.
MARLOW NICHOLS, Morrisville, Bucks Co., Pa.

150,000 Dutch Bulbs, 250,000 Extra Pear, Apple, Quince, Cherry and Plum Stocks.—New Strawberry, Blackberries, Currants, &c., Choice New Green-House and Window Plants, Seeds and Bulbs, by mail, pre-paid.—Garden and Flower Seeds, Wholesale and Retail.—Seeds sent on Commission.—Fresh Pear Seeds.—Fruit and Ornamental Trees. Cape Cod Cranberry, the most productive sort for low or high land, \$5.00 per 1,000, with directions for culture. Catalogues gratis.

B. M. WATSON, Old Colony Nurseries, Plymouth, Mass.

CATALOGUES SENT FREE.

M. O'KEEFE, SON & CO.,

Importers and Growers, Wholesale and Retail Dealers in Flower and Vegetable Seeds, Dutch Bulbs, Fruit Plants, Ornamental Shrubs, Roses, &c.
Elwanger & Barry's Block, Rochester, N. Y.

For Sale.

500,000 Apple Seedlings, 2 years old.
100,000 Concord Grape Vines, 1 to 3 years.
50,000 Clarke Raspberry plants.
25,000 Kittatunga Blackberry plants.
Address
STEPHEN HOYT & SONS,
New Canaan, Conn.

Advertisements, to be sure of insertion, must be received **BEFORE** the 5th of the preceding month.

TERMS—(cash before insertion):
Ordinary Pages, \$1.50 per line, less than 4 lines, \$5.
Open Pages (open without cutting), \$2 per line.
Page sent to Reading Matter and Last Page—\$2.50 per
agate line of space for each insertion.

(Advertisements on this page, \$1.00 per Aerate line of space.)

PATENT LEAD-ENCASED BLOCK TIN PIPE IS SAFE, STRONG, AND DURABLE.



It is recommended by the Medical Faculty, endorsed by Water Boards, Agriculturalists, Engineers, and Experts; introduced into all the new PUBLIC SCHOOLS, HOSPITALS, DISPENSARIES, and most of the new first-class buildings. It gives perfect satisfaction wherever used, and, added to its sanitary advantages, it is cheaper and stronger than lead pipe.

All danger of lead poisoning prevented. This is the only pipe in the market which combines all the requisites of a perfect Water Pipe—Sanitary, Mechanical, and Economical. Water flows through it as pure as if drawn through silver. To furnish cost per foot, give us head or pressure of water, and bore of pipe.

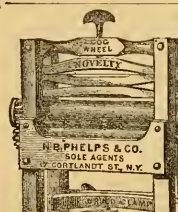
Also, manufacturers of Sheet Tin, Solder, &c. Circulars sent free.

COLWELLS, SHAW & WILLARD MFG CO.
Foot of West Twenty-seventh-st., N. Y., New York. (Downtown office, No. 8, Rockwell-st., corner of Pearl.

FROM THE

"AMERICAN AGRICULTURIST."

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LUMS' EVERBEARING RASPBERRY.—A good stock of this new and valuable variety at great reduction from former prices. Small fruits a specialty. Prices low. Send for Catalogue. Address

H. B. LUM, Sandusky, Ohio.

FRUIT AND ORNAMENTAL TREES FOR FALL OF 1868.

We have the pleasure of announcing that we are prepared for the Fall Trade with an unusually large and well-grown stock, embracing

Standard and Dwarf Fruit Trees.

Grape Vines, new and old sorts, strong open ground plants.

Currents, **Raspberries**, **Blackberries**, and all the Small Fruits.

Ornamental Trees and Shrubs.

Roses and **Flowering Plants** of every description. Nurserymen, Dealers, and others, purchasing largely, will be dealt with liberally, and all orders, however small, will receive prompt and careful attention. Parties interested will do well to consult the following Catalogues, which are just issued, and will be sent pre-paid on the receipt of 10 cts. each, for Nos. 1, 2, and 5, etc. for No. 3.

No. 1, Descriptive and Illustrated Catalogue of Fruits, No. 2, Descriptive and Illustrated Catalogue of Ornamental Trees, &c. No. 3, Descriptive Green-House Plants, No. 4, Wholesale Catalogue of Fruit.

EDLAWANGER & BARRY,
MOUNT HOPE NURSERIES, ROCHESTER, N. Y.

Geneva Nursery. 300 acres in different stages of growth. FRUIT AND ORNAMENTAL TREES.

Seedling Stocks, **Grape Vines**, &c. Standard and Dwarf Apple, Standard and Dwarf Pear, Standard and Dwarf Cherry, plenty of Early Richmond, Plum Trees, 2 year old, fine Trees, Apples, Nectarines, Blackberries, a fine stock of Missouri Mammoth, Wilson's Early, Kittitany, and other Small Fruits. Send stamp for Trade List.

W. & T. SMITH, Geneva, N. Y.

AUTUMN, 1868.

Rochester Commercial Nurseries,

ESTABLISHED, 1830.

W. S. LITTLE, Proprietor,

(Formerly H. E. HOOKER & CO.)

THE NEW CIRCULAR OF PRICES, (by the Dozen, Hundred and Thousand), for the Fall Trade, is just Published, and will be sent FREE to ALL APPLICANTS.

Also, a new edition of the DESCRIPTIVE CATALOGUE—FRUIT AND ORNAMENTAL, 80 pages—containing much valuable information, mailed on receipt of 10 cts.

A SPLENDID STOCK is offered this year, of

Hardy Trees and Plants,

including

Standard and Dwarf Fruit Trees, of fine, thrifty growth.

Trees and Shrubs for Ornament.

ROSES—a beautiful assortment—on their own roots. **Grape Vines** and **Small Fruits** of every description. Address early in the season.

W. S. LITTLE,
(Commercial Nurseries,) Rochester, N. Y.

AT AUCTION.

The Best Stock and Fruit Farm in Conn.

With 50 Head of Thoroughbred Alderneys, &c.

Sale positive, rain or shine.

On the Farm, in Woodstock, Conn.,

Wednesday, Oct. 7th, 1868.

Send for Catalogue of the above for particulars, &c.

C. A. LINCOLN, Real Estate Broker, Hartford, Conn.

Goodrich Seedling Potatoes.

Get Them True to Name.

I had the entire stock of Seedling Potatoes left by the late Rev. C. E. Goodrich, and was the first to send out the Early Goodrich, Calico, and Early Rose. Will take orders until Dec. 1st, unless previously sold, as follows:

	Peck.	Bush.	Bbl.
Early Goodrich,	\$2.00	\$3.00	\$5.00
Calico and Calico, each	1.00	2.00	5.00
Seedling No. 310, early, round, white	1.00	3.00	7.00
Harison,	1.00	3.00	7.00
Early Rose, 1 B. 81	3.00	15.00	40.00
Also, Shaker, Fancy & Early Bebe, each 100	2.00	5.00	10.00

Have but few barrels of Early Bebe, Utica, N. Y.

D. S. HOFFER, Utica, N. Y.

Dutch Bulbous Roots,

Sent by Mail, post-paid, at Catalogue Prices.

Our large stock of **Hyanthids**, **Tulips**, **Polyanthus**, **Narcissus**, **Jonquils**, **Crocus**, **Croton Imperialis**, **Iris**, **Shoe Drops**, **Ranunculus**, **Anemone**, **Japan** and other Lilies, &c., &c., has been received in fine condition. Catalogue containing a splendid assortment of all the leading varieties mailed, post-paid, as follows: Collection No. 1, \$20; No. 2, \$10; No. 3, \$5; or, if desired, No. 4, at \$3. For contents of collections, information in reference to culture, &c., send for Circular of Dutch and other Bulbs, which we will mail to all applicants enclosing 5 cents.

Address

313 Washington St., Mass.

SHAKER GRAPE ROOTS. Prepared at White Water Village, Ohio, from layers, and 2 and cuttings, started in Hot-house and grown out of doors with much care. We feel assured they will give satisfaction. They will be sold low. The varieties offered are: 1st, Seedling of Concord, Hartford Prolific, Clinton, Delaware, Iowa, Israel, Rogers' Hybrids, Nos. 1 and 15, and Martha. Send for price list.

Address

H. R. DEAR, Harrison, Ohio.

GRAPES.

We invite the attention of Dealers and Planters to our superior and perfectly healthy stock of **GRAPE VINES**, propagated from our own vineyards, and at prices cannot fail to suit. Price Lists free to applicants.

C. L. HOAG & CO.,

Lockport Grape Nurseries, Lockport, N. Y.

Bloomington Nursery.

17th Year; 400 Acres; 10 Green-houses.

For the Fall Trade we offer much the largest and fullest assortment ever offered West.

Apple, **Pear**, **Cherry**—Standard and Dwarf. **Peach** and **Plum**—Immense stock.

Grape Vines—Over 30 acres, 1 to 8 years, of nearly all the old and new kinds.

Small Fruits—Choice new, as Kittitany and Wilson's Early Blackberries, Clarke, Thornless, Ellsland Raspberries, Jucunda Strawberry, &c.

Green and Forest Trees of all sizes.—**Oange Orange Hedge Plants**—Apple and other **Fruit Tree Stocks**, Yearling grafts or buds of **Apple**, **Pear**, **Plum**, **Cherry**, &c.

Right for neat and cheap transportation to distant markets, if need be, by Express.

Roses, largest and fullest assortment we know of—nearly all on own roots.

Shrubs, **Creepers**, **Hardy Bulbs**, for Fall planting. Send 3 stamps for 3 Catalogues, Wholesale, Descriptive, and Plant Catalogues.

P. R. PRENTY,
Bloomington Nursery, McLean Co., Ill.

THE CLARKE RASPBERRY.

Send to headquarters for strong, genuine plants. The Clarke stands among Raspberries of all others as the Barlett Pear does among pears. Eminent Pomologists and Amateurs acknowledge it by acclamation to combine more excellencies than any other Raspberry. It has paid \$1,000 here for fruit the past season. The Clarke is the original plant in the County and is a specialty with me. My plants are propagated from a plant which was the original stock eight years since, and are warranted genuine. Having disposed of the largest stock in existence the past season to Nurserymen and Dealers, and in every instance to the satisfaction of purchasers, I will find it to their advantage to correspond with me, as I have the largest stock, which will be sold low.

GRAPE VINES.

A fine stock of Concord and Hartford Prolific grape vines, two years old, root, pruned and transplanted, of extra large size, and will come into immediate bearing. To save them out I shall put them at the price of one year olds. Also a large stock of Rogers' Nos. 4 and 15, and other varieties.

LYMAN BARNETT, North Haven, Conn.

CAMELLIAS.

PARSONS & CO. offer a stock equal to any ever grown in the country. The attention of Plant-growers is invited to ours, which are very healthy and beautiful. They can be furnished from \$25 per 100 upwards, according to size and quality. For List and Prices address

Flushing, N. Y.

T. C. MAXWELL & BROS., GENEVA, N. Y.

Offer to All Purchasers of Nursery Stock their Large and Complete Assortment of all the Leading Items of the Trade.

We invite

Nurserymen, Dealers, and Planters, to call and examine our stock, or write for particulars, with stamps for Catalogues as follows: No. 1, Descriptive Catalogue of Fruits, No. 2, Descriptive Catalogue of Ornamentals, No. 3, Descriptive Catalogue of New Plants, &c. No. 4, Wholesale Trade List.

T. C. MAXWELL & BROS., Geneva, N. Y.

APPLE STOCKS.—2,000,000 No. 1 Apple Stocks, the best one year-olds ever offered to the trade. Will be sold cheaper than the cheapest. Send for price circular.

C. F. LOVELAKE, Iowa City, Iowa.

The Great Wilson Early Blackberry.

Bears more, is larger and sweeter than any other. I have 100 acres planted with it; the plants for which, together with a large, fine stock for sale, were all propagated direct from the mother plant, which I have. Small lots sent by mail at annexed prices:

	doz.	100	1,000
Wilson Early Blackberry.....	\$2.50	\$15.00	\$125
Kittitany ".....	1.00	6.00	50
Thornless Black Cap Raspberry.....	1.50	6.00	50
Loosdelle ".....	1.00	1.00	10
Clarke ".....	2.50	15.00	125
Philadelphia ".....	2.00	12.00	100
Brickell ".....	1.00	4.00	30
Prosser, New ".....	1.00	10.00	30

Asparagus Roots..... 1.00 1.00 10
All varieties warranted true to name. There is much lost by planting spurious sorts. For Strawberries, Currants, Grapes, &c., send for prices.

JOHN S. COLLINS, Moorestown, N. J.

FRUIT AND ORNAMENTAL TREES.

SMALL FRUITS, (including the new varieties), **Rhubarb**, **Asparagus**, **Hedge Plants**, &c., in large quantities, and of superior quality. Descriptive Price Catalogues mailed to applicants.

EDWARD J. EVANS & CO.,

Nurserymen and Seedsmen, York, Penn.

WAIT and get our prices before buying any **Grape Vines**, **Strawberries**, **Raspberries**, **Blackberries**, **Ranunculus**, &c., &c. An immense stock, all of which we shall sell. Great inducements offered. Catalogues free.

C. E. & J. S. FRITTS, Elwood, N. J.

Grant vs. Seymour.

Wanted every man who expects to vote for Grant, to send for CHAS. COLLINS' Small Fruit Catalogue, advertised on page 245.

Catalogues Sent Free.

We have a large assortment of the choicest varieties of Dutch Bulbous Flower Roots, and are prepared to fill all orders. Bulbs delivered free of charges. Address for catalogue,

M. O'KEEFE, SON & CO.,
Rochester, N. Y.

THE PRESIDENT WILDER STRAWBERRY.



THE AMERICAN AGRICULTURIST SAYS:

"This is the result of years of experiment, and the one among thousands of seedlings considered by its originator as combining the most desirable qualities—a cross between La Constante and Hovey's Seedling. We hope that Col. Wilder will accede to the wishes of his pomological friends, and allow this excellent and handsome fruit, which cost him so much labor to produce, to bear his distinguished name.

THE PRESIDENT WILDER, PRINCE OF STRAWBERRIES.

THE BEST STRAWBERRY EVER PRODUCED IN AMERICA.

Those who know Col. Wilder know that he would never allow his name to be associated with anything but THE BEST. So fully have we been impressed with his value, that we have bought of Col. Wilder, AT AN ENORMOUS PRICE, the entire Stock of Plants, all he has or will have, and now

OFFER AS A GIFT

To Every Subscriber for the AMERICAN JOURNAL OF HORTICULTURE,

whose name appears on our books for 1869, whether new or old,

TWO HEALTHY PLANTS OF THE PRESIDENT WILDER STRAWBERRY.

And it will be sent out in no other way. *This offer, of course, does not include those who have received other plants or club deductions.* We shall deliver the plants in the order subscriptions are received; those coming first will receive the plants first. Subscriptions for 1869 may be sent in now. Price, \$3.00 per annum.

READ WHAT IS SAID OF THE PRESIDENT WILDER STRAWBERRY.

[Report of the Fruit Committee of the Massachusetts Horticultural Society.]
"It is hardy, vigorous, highly productive; of largest size, superior in quality, beautiful in appearance, firm enough for market purposes; and should it sustain the character with other cultivars which its originator has obtained, it will prove to be the most valuable of the many contributions which Mr. Wilder has made to horticulture, and will worthily bear his name. With his permission, we are authorized, and do hereby, name his strawberry seedling, No. 13, 'The President of Wilder.' Yours truly, JAMES F. C. HYDE, President Mass. Horticultural Society."

Messrs. J. E. Tilton & Co.—*Gentlemen:* Some four years ago, my attention was called to some seedling strawberries raised by Hon. M. F. Wilder, which appeared very well. I have watched them carefully since, both when on exhibition and at the nursery of the originator, and I do not hesitate to say that the No. 13, now known as 'President Wilder,' promises to be the most valuable strawberry in existence. It seems to possess all the good qualities desirable in this delicious fruit. We are very glad you have made arrangements to disseminate it in connection with your valuable Journal, and we hope the public will appreciate the effort you are making to furnish them with a valuable strawberry and a valuable horticultural magazine.

Messrs. J. E. Tilton & Co.—*Dear Sirs:* My experience in purchasing and treating new varieties of strawberries, like that of most other amateurs, has been one of disappointment; and I have become very sceptical about new and highly praised seedlings. Still, repeated disappointments and failures do not prevent me from trying everything new that comes to my notice, and I have taken the trouble to make a thorough investigation of Mr. Wilder's new strawberry, and I am fully satisfied that it is all that is claimed for it, and that it is an immense acquisition. Yours truly, J. M. MERRICK, JR.

Messrs. J. E. Tilton & Co.—*Gentlemen:* I congratulate you upon the acquisition of the Prince of Strawberries, rightly named after one of our veteran Pomologists, President Wilder. Since the production of this strawberry, I have watched its growth from year to year with much care; from the first trial to the close of the present season, I have considered it, with few exceptions, the best strawberry in cultivation—possessing, as it does, all the qualities essential for a first-class fruit. DANIEL T. CLEGG, Firm Carle & Cobb, 318 Washington-st., Boston.

J. E. TILTON & CO.,

Publishers of the American Journal of Horticulture, Boston, Mass.

Extraordinary Premiums to Persons getting up CLUBS.

Almost any one will find some of his friends and neighbors willing to join in a club, and by a little exertion can secure for himself these valuable premiums without cost. For \$5 I will send 5 Loas, 5 Concord, 5 Hartford, 5 Ives' Seedling, and one of each Extra to Getter up, besides 1 Salem or 1 lb. Early Rose Potato as Extra Premium.—For \$10 I will send 10 Loas, 10 Concord, 10 Hartford, 10 Ives' Seedling, and 3 of each kind Extra, and 3 Salem and 6 Kittanning Blackberries to Getter up. All the above first-class plants from my well-known stock sent free of charge on receipt of Price. See my other advertisements. Send for Price Lists. Address, G. E. MEISSNER, Richmond P. O., Staten Island, N. Y.

THE EUMELAN is very vigorous, hardy, and productive, and ripens earlier than Hartford Promise. The berries adhere firmly to the bunch, and do not drop from the vines or shrivel when suffered to hang a long time after being fully ripe. The flavor is *strongly pure* and refined, rich, sugary, sparkling, and vinous, ripening perfectly all through, and as soon at the center as circumference.

In short, the Eumelan possesses all of the high European qualities of excellence that are now indispensable to a valuable American Grape, without any of the native defects. The Loas for table and for White Wine are no superior in any country, and the Eumelan gives every indication of holding the same place for fruit, which, from its color, will give it great additional value. Like the Delaware, which is so deservedly popular, the Eumelan had triumphed over all the difficulties of neglectful treatment during more than a quarter of a century in different localities before it became known to the public, and shows the most satisfactory record from disinterested persons.

The number of plants that I am now able to offer both of one and two years old, is small, but the quality is very high. Prices from three to five dollars. I have published full particulars of history, and description with representation of bunch, and prices with Club-propositions, sent two-cent stamp.

Loas, near Peekskill, Westchester Co., N. Y.

BULBS FOR FALL PLANTING.

HENRY FERRE,

(Old stand of B. K. Bliss.)

231 Main-st., Springfield, Mass.

Our *Autumn Catalogue*, containing a complete list of *Hyacinths, Tulips, Lilies, Anemones, &c.*, is now ready, and will be forwarded to all applicants. Address, HENRY FERRE, 231 Main-st., Springfield, Mass.

COLFAX STRAWBERRY.

Send for our "List of New Sorts" for description and beautiful cut of this berry, and remember we will give One Hundred Dollars to any person who has a sort that will prove to be more productive.

PURDY & JOHNSTON, Palmyra, N. Y.

PURDY & HANCE, South Bend, Ind.

See our advertisement in Sept. No.

GRAPE VINES.

The subscribers are now prepared to furnish superior vines of 1 and 2 years' growth, of the leading varieties at moderate rates. Address, PETER DE TEW & SONS, Nyack, N. Y.

Letter from FRED. MADD—*I wish to say of your vines that I have never seen better, and seldom as good. You are entirely right in propagating a small number of decidedly good ones rather than a large number of poor ones. The greater part of your stock will fairly come under the head of what are commonly called extras.* PETER B. MEAD.

PEAK'S EMPEROR STRAWBERRY.

Our "List of New Sorts" gives full particulars with a most magnificent cut and truthful representation of this variety. See our advertisement in Sept. No. Address, PURDY & JOHNSTON, Palmyra, N. Y.

OR, PURDY & HANCE, South Bend, Ind.



IT DON'T

SCRATCH YOU,
Or Tear Your Clothes,
Daxison's Thorough

Black Cap Rashberry

is the best, as it is hardy, pro-

ductive, early, and sweet, and

it is a pleasure to cultivate it.

For origin, description, prices,

testimonials, &c., send stamp

for Circular.

JOSEPH SIXTON,

Angola, Erie Co., N. Y.

Early Rose Potatoes.

1 lb., \$1; 4 lbs. \$2.25; 1 pk., \$5; 1 bushel, \$15; 1 barrel, \$40. I grow this potato 6 by 6 inches in circumference in 39 days; from one hill, single eye planted, I had 5 lbs. 9 oz. potatoes.

Harrison potatoes 4 lbs., \$1; 1 barrel, \$8; 1 and 4 lbs. packages of either kind sent by mail pre-paid.

W. M. C. CAWSTER, 156 Read-st.

PERSONS wishing any Wilson's Early or Kittanning Blackberries; Philadelphia, Clarke, or Doolittle's Raspberry, or any of the leading varieties of Strawberry plants, will please send for my new price Circular, which will be mailed free to all. Prices much reduced. Address, HENRY CLAYTON, Mount Pleasant, Del.

Those wishing to purchase Strawberry, Raspberry or Blackberry Plants, Currant bushes, Grape Vines, or Early Rose Potatoes, at lowest rates, for good, genuine stock, please send for my Price List.

THOS. C. ANDREWS, Moorcroft, N. J.

Apple and Pear Stocks, Osage Orange Plants, Price for all 1868 all of extra quality, at wholesale and retail. Free reasonable, JOSUAH HALL, Tipton, Cedar Co., Iowa.

SMALL FRUITS—Strawberries, \$2.00; Philadelphia Rascal, \$20; Doolittle, \$12; Dorchester Black, \$15; Asparagus, \$3. SAMUEL T. DUFFELL, Tardville, N. J.



Education of Animals.

WHAT WONDERFUL FEATS THEY HAVE PERFORMED—SIMPLE TRICKS EASILY TAUGHT—HOW TO LEARN THE SECRETS OF TRAINING, AND HOW TO MAKE A GOOD INVESTMENT.

Nearly all animals are capable of a certain amount of education; some more, some less. Our domestic animals learn to understand and obey certain commands; they also learn to do many things in a state of domestication which naturally they would not do. Under proper instruction they are often taught to do quite surprising feats, and a great deal of money is made by the exhibition of performing animals. The "trick" animals are the most attractive feature of circus exhibitions, and the owner of a single animal, well taught, will often acquire a



fortune from the hire of his animal's services.

Horses are the most common among educated animals, and they readily learn a great many amusing feats. Waltzing, feigning death, going lame with any foot desired, kissing, answering questions, finding hidden articles, "shaking hands," firing pistols, grinding organs, and other tricks, can be taught horses or ponies of ordinary intelligence.

Dogs are probably the greatest favorites with amateur trainers; they are less costly than horses, and can be taught perhaps even a larger number of feats. How proud the boy feels, whose dog will give his paw, beg, stand on his head, leap through hoops, carry baskets, bring articles he is told to go for, or do any of those things, which, with patience he may be taught! How popular such a dog is among that boy's school fellows, and what a hero his owner be-



comes! And a dog taught a few simple tricks will often sell for two or three times what he

would bring otherwise. But dogs have been taught much more wonderful performances; such as selecting the letters (on bits of card) of words given, to select a handkerchief of any color commanded from many of all colors, to place that handkerchief under any designated article of furniture; to give it to any designated person, or to a person dressed in any designated color; to select any article called for from many articles scattered promiscuously around; to bring any desired article from any designated place however distant; besides feats of muscular dexterity, like standing on a ball and rolling it up an inclined plane, &c.

Hogs are not generally considered very intellectual, but they have been taught to answer questions—by selecting the appropriate words



printed on cards; tell the day of week or month; tell the age of any lady present; and do other amusing things.

The sure-footedness of the mule enables him to do some feats which a horse would find rather difficult; walking on the tops of porter bottles is one of these. Bears, though so clumsy, are taught a variety of tricks; dancing, standing on their heads, playing the tambourine, and climbing posts, are the commonest. The reader will perhaps recall "Old Adam's" bears, who did much more; his collection including "dancing bears, crying bears, laughing bears, and singing bears;" though he probably had a vivid imagination.

The wonderful sagacity of the elephant enables him to comprehend what the trainer desires, with almost startling readiness, and he will with great docility go through a variety of performances, which doubtless seem very absurd to him. Even tigers are made to jump through hoops and otherwise display their agility. But



it would be tiresome to describe all the tricks taught monkeys, goats, cats, (who learn better than most persons would imagine, and perform some curious feats), and other animals. Even rats and mice may be trained.

Fleas have been also taught! A regular troupe has been exhibited, part of which were dressed up and taught to mimic human actors, while others personated horses and drew a little coach, with fleas for driver, footmen, and exalted personages inside, out riding for their health.

It is said that "whatever man has done, man can do;" so probably any intelligent animal can be taught any trick, however wonderful it may appear, if properly trained. There are many mysteries about training animals, and in the manner of arranging the tricks. In an early number of Haney's Journal will be given some curious details about Performing Animals, with

explanations of the tricks and instructions for teaching many animals. To those interested in



the subject the proposed information will prove highly acceptable, and will gratify that curiosity all persons have felt, on seeing exhibitions of performing animals, to know "how it is done." Many profitable and useful hints by which farmers and animal owners may profit, will doubtless be found, besides the instructions by which boys may tame and train their pets; and to all interested in the subject, we think the promised article alone will be worth more than the entire subscription price, whether they propose training animals for profit, or merely as a pleasant recreation.

Haney's Journal has presented many attractive features, given much useful and profitable articles, but the one in prospect will prove as popular as any heretofore given, and will doubtless add much to its already large circulation and wide popularity. The low price of Haney's



Journal places it within the reach of all—only fifty cents a year—and to all new subscribers for next year received this month, the Nov. and Dec. numbers of 1868 will be given free.

Haney's Journal will be enlarged with the January number, giving next year over 1,500 square inches of reading matter, illustrations, &c., every month. Quality, however, is more important than Quantity, and Haney's Journal is good as well as cheap. See advertisement at bottom of this page, wherein the publishers give further information.

HANEY'S JOURNAL FOR 1869.

Enlarged to double its present size—16 pages instead of 8—giving over 1,500 square inches of reading matter, illustrations, &c., every month. Same style retained, which has been so extremely popular, but with new attractions added. An intensely interesting exposure of

QUACKS.

—Quack Doctors, Quack Medicines, and Quack Books, besides tall, clear, and authentic exposures of all the new humbugs and swindles, will be given by the author of the celebrated "Rogues and Trickeries of New York." Also valuable recipes, useful arts, hints on health, wealth, success in life, social advancement, and all topics helping the young onward in the struggle of life, and curious, amusing, instructive miscellaneous matter for all readers, with a moderate number of good engravings. We intend that HANEY'S JOURNAL shall PAY every subscriber. That it has done so in the past, we believe from the testimony of readers themselves.

To all new subscribers sending this month Fifty cents for subscription for 1869, we will send the Nov. and Dec. Nos. of this year free, if asked for.

1,500 square inches of good and profitable reading matter, attractive illustrations, &c., &c., in every number, all for

Only Fifty Cents a Year.

Send now, Fifty cents for a whole year. Single copies can be had of newdealers everywhere, and where convenient we prefer that you should get the Journal of some dealer in the neighborhood instead of subscribing. Any dealer will get it for you, if he does not keep it for sale, if you ask him to. Specimens can be procured **only** from newdealers.

Dealers supplied by Wholesale Agents in all the principal cities. **JESSE HANEY & CO., Publishers, 119 Nassau-st., New York.**

CHOICE FRUIT TREES.

We offer a large stock of the following items, of an EXTRA FINE QUALITY. We employ no Agents, but sell our best direct to Planters or Dealers at Low prices. Write for full particulars.

DWARF AND STANDARD PEAR.
DWARF AND STANDARD CHERRY.
PLUM OR PLUM OR PEACH.
CHERRY, ELTHAM.
PLUM SPECIMENS, &c., &c., &c.
T. T. SOUTHWICK & CO., Danville, Liv. Co., N. Y.

Nesbitt's Small Fruit Nursery.

Nurserymen and others desiring an unusually fine stock of 2 year vines of Concord, Iowa, and Crevelling, at reasonable rates for retailing, or for planting, are cordially invited to examine my stock. I have also a splendid stock of 1 year vines of Martha, Hartford, Concord, Iowa, Alvey, &c., of Clarke, Philadelphia, and Doublet Raspberries; of Wilson and Kittatany Blackberries; of Junonia, Blackberries, and Wilson Strawberries. Also Early Rose, Early Goodrich, and Harison Potatoes. Send stamp for Circular.

WM. L. NESBITT, Lewisburg, Penn.

AT REID'S NURSERIES. Elizabeth, N. J.—A large stock of Fruit and Ornamental Trees, Evergreens, Shrubs, Hedge Plants, &c., occupying ground which must be cleared this fall, for sale at low prices. Catalogues containing list of varieties of Fruits, &c., &c., with prices annexed, forwarded on application. N. B.—A large lot of Kittatany Blackberries, two years old, strong, low rates. Address
W. M. L. REID, Successor to Wm. Reid.

SMALL FRUITS IN VARIETY.—Those who have an idea of planting Small Fruits should send for one of my new Small Fruit Catalogues, containing descriptions, prices, &c., of the newest, best, and most profitable varieties of Strawberries, Blackberries, Blackberries, Currants, Grapes, Apples, &c.
CHAS. COLLINS, Moorestown, N. J.

GRAPE VINES.

The subscribers offer their well-known large stock of Grape Vines at very low rates. Vines Seedling, Concord, Delaware and Iowa, can be furnished in very large quantities. Address

PARSONS & CO., Flushing, N. Y.

PURCHASERS

Wishing to buy genuine Clarke Blackberries, Grape Vines, &c., &c., CHEAP, will find it GREATLY to their advantage to correspond with J. W. CONE, Vineland, N. J.

BLACKBERRIES.

Wilson Early, \$1 per 100, root-cuttings, \$1 per 100; Kittatany, \$1 per 100, 3000 Philadelphia, 2 year, per doz.; \$1 per 100; \$20 per 1000; 600 Clinton, 1 and 2 year, \$1 per doz.; \$4 per 100; 1500 Hartford Proflig, 1 year, \$1.50 per doz.; \$10 per 100; 1000 Early Rose, 1 year, \$1 per 100; \$3 per 1000; 600 Cherry Trees, 1 year, good varieties, good size, \$10 per 100, first class seedling vines.
SAML C. DECOU, Recklesstown, Burlington Co., N. J.

For Sale at the Owego Nursery.

30,000 Concord Vines, 1 and 2 year-old, \$1 per doz.; \$1 per 100; \$20 per 1000; 3000 Philadelphia, 2 year, per doz.; \$1 per 100; \$20 per 1000; 600 Clinton, 1 and 2 year, \$1 per doz.; \$4 per 100; 1500 Hartford Proflig, 1 year, \$1.50 per doz.; \$10 per 100; 1000 Early Rose, 1 year, \$1 per 100; \$3 per 1000; 600 Cherry Trees, 1 year, good varieties, good size, \$10 per 100, first class seedling vines.
HARVEY CURTIS, Owego, Tioga Co., N. Y.

Higby's Everbearing Strawberry.

Bears from June till November unless the blossoms are killed by frost or drought. These strawberries (grows) with full particulars. Also 30,000 apple seedlings, one year old. Address
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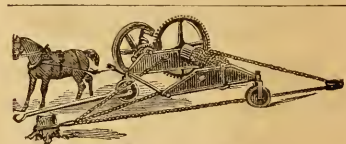
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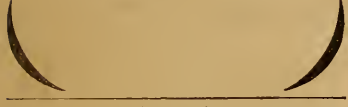
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EXPLANATION.—Our immense circulation enables us to do things on a grand scale, and doing thus, adds again to our circulation. We spend large sums for engravings, for collecting information, etc., and it costs no more for all these to supply half a million subscribers than it would half a thousand. There is but one office, one set of editors, engravers, etc., to be supported. Therefore we can furnish a superior paper at an exceedingly low price. . . . We expend all the subscription money, and tens of thousands of dollars more, in simply getting up and furnishing the paper itself, and yet make a satisfactory profit, besides paying all the premiums. Our unprecedented circulation makes every line very valuable to advertisers, who gladly pay a large price to reach so many people—especially as they know we shut out humbugs and unscrupulous parties from our advertising columns. So our advertisements furnish money to pay premiums; the premiums get more subscribers; more subscribers add to the value of the advertisements, and thus we get more money for more premiums. The whole thing is simple, and only requires courage and enterprise to carry it out. Everybody gets a very good and very cheap paper; and thousands of people get good premium articles—just such as they want—simply by making up clubs of subscribers. Your opportunity to do this, Reader, is just as good as that of any other person in the world. What premium will you have? Further on we tell how to get it.

It Pays DOUBLY to try for our Premiums. A few odd hours' work, with a copy of the paper to show, will collect enough subscribers to secure one of the fine articles in our list. As a business, some Gentlemen, several boys, and many Ladies, canvassed for subscribers, received various premiums, sold them for cash, and made high wages. One Lady thus made \$1,200 in less than 6 months the past year. Others made \$150 to \$250 each, in single months.—Again, Everybody that circulates the *Agriculturist*, and thus gets more people to reading and thinking, is doing a good work for the country. Twenty-five copies circulating in a neighborhood will stimulate thought and enterprise that will soon increase the value of all the property in the place.

Presents.—Many persons make up clubs and secure our premium articles, as sewing machines, silver sets, etc., for presents to a wife or friend. Many neighborhoods make up clubs for sewing machines to be given to poor widows, or to a Pastor's wife. Scholars unite and get a Watch for a teacher, a Melodeon for their school room, and so on.

(In the following table is given the price of each article, and the number of subscribers required to get it free, at \$1.50 a year, and at the lowest club rate of \$1 a year. The descriptions of the articles are given in the pages following.)

Table of Premiums and Terms, For Volume 23—(1869.)

Open to all—No Competition.		Price of Premium.	Number of Subscribers required at \$1.50 a year.
No.	Names of Premium Articles.		
1	Short-horn Bull, "Clansman,"	\$300 00	425 1250
2	Short-horn Bull, "Madison,"	\$300 00	425 1250
3	Ayrshire Bull, "Warner,"	\$300 00	250 750
4	Ayrshire Bull, "Duke of Harford,"	\$300 00	250 750
5	Ayrshire Bull, "McKenzie,"	\$300 00	250 750
6	Ayrshire Bull, "Materna,"	\$300 00	250 750
7	Ayrshire Bull, "Duke of Devon,"	\$300 00	150 450
8	Ayrshire Bull, "Johnny Green,"	\$300 00	150 450
9	Ayrshire Bull, "John Brown,"	\$300 00	150 450
10	Ayrshire Bull, "Calf,"	\$300 00	80 240
11	Ayrshire Bull, "Wachusett,"	\$300 00	250 750
12	Alderney Bull, "Academy,"	\$300 00	250 750
13	Alderney Bull, "Ossipee,"	\$300 00	220 660
14	Alderney Bull, "Alleghany,"	\$300 00	220 660
15	Cotswold Ram,	\$200 00	250 750
16	Cotswold Ram,	\$200 00	220 660
17	Cotswold Ram,	\$200 00	110 330
18	Cotswold Ram,	\$200 00	110 330
19	Cotswold Ram,	\$200 00	110 330
20	Cotswold Ram,	\$200 00	110 330
21	Cotswold Ram,	\$200 00	110 330
22	La Fleche Fowls, one Pair,	\$100 00	110 330
23	Houdan Fowls, one Pair,	\$100 00	50 150
24	Creve-cœur Fowls, one Pair,	\$100 00	50 150
25	Black Spanish Fowls, one Pair,	\$100 00	50 150
26	Brahmas, Light, one Pair,	\$100 00	50 150
27	Brahmas, Dark, one Pair,	\$100 00	50 150
28	Gold Laced Sebright Bantams, one Pair	\$15 00	22 75
29	Early Rose Potato, (Three lb. parcel),	\$2 00	1 25
30	Garden Seeds for a Family (10 kinds),	\$5 00	13 87
31	Flower Seeds for a Family (100 kinds),	\$5 00	13 87
32	Set of Felt Croquet,	\$20 00	30 97
33	Sewing Machine (any kind desired),	\$100 00	30 97
34	Sewing Machine (Wheeler & Wilson),	\$55 00	60 240
35	Sewing Machine (Singer),	\$55 00	60 240
36	Sewing Machine (Horse Machine Co.),	\$60 00	67 270
37	Sewing Machine (Florence),	\$63 00	70 275
38	Sewing Machine (Singer),	\$65 00	72 280
39	Sewing Machine (Willcox & Gibbs),	\$65 00	72 280
40	Sewing Machine (Fiske & Lyon),	\$65 00	72 280
41	Knives and Forks (any kind),	\$24 00	30 116
42	Knives and Forks (any kind),	\$24 00	30 116
43	Knives and Forks (any kind),	\$24 00	30 116
44	Knives and Forks (any kind),	\$24 00	30 116
45	Knives and Forks (any kind),	\$24 00	30 116
46	Knives and Forks (any kind),	\$24 00	30 116
47	Knives and Forks (any kind),	\$24 00	30 116
48	Knives and Forks (any kind),	\$24 00	30 116
49	Knives and Forks (any kind),	\$24 00	30 116
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95	Knives and Forks (any kind),	\$24 00	30 116
96	Knives and Forks (any kind),	\$24 00	30 116
97	Knives and Forks (any kind),	\$24 00	30 116
98	Knives and Forks (any kind),	\$24 00	30 116
99	Knives and Forks (any kind),	\$24 00	30 116
100	Knives and Forks (any kind),	\$24 00	30 116

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-two Premiums, Nos. 29, 30, 31, 61, 62, 63, 64, and 76 to 100 inclusive, will each be delivered FREE of all charges, by mail or express, (at the Post-Office or express office nearest recipient), to any place in the United States or Territories, except those reached only by the Overland Mail.—The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance that may be specified.

Read and carefully note the following items: (a) Get subscribers anywhere; all sent by one person count together, though from one or a dozen different Post-Offices. But... (b) State with each name or list of names sent, that it is for a premium list, and we will so record it... (c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. You can have any time, from one to six months,

to fill up your list as large as you may desire. The premium will be paid whenever you call for it....(d) Send the exact money with each list of names, so that there may be no confusion of money accounts....(e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer premiums to canvassers. N. B.—The extra copy to clubs of ten or twenty is not given where premium articles are called for....(f) Specimen Numbers, Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, for every extra copy of the paper costs, with the 2c. prepaid postage, about 12 cents....(g) Remit money in Checks on New York, or send Post-Office Money payable to order of Orange Judd & Co., or cents. Post-Office Money Orders. If neither of them is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster and take his receipt for it. Money sent in any of the above ways is at our risk.

READ THE

Description of the Premiums.

Nos. 1 to 28.—Breeding Animals. General Note.—While there is an ample supply of nearly all other premium articles, the supply of animals is necessarily limited to the specimens named below, and our rule will be to furnish each one to the first party calling for it, with the specified number of subscribers.

Nos. 1, 2. — Short-Horn Bulls.—These two splendid animals are from the most celebrated herd in America, that of Mr. JAS. O. SHELTON, Geneva, N. Y., which is abundant guarantee of their quality and value. The Short-horns, or Durham, are distinguished for their very large size, rapid growth and maturity, and easy fattening. They are the best beef cattle in the world for profit of raising. This breed has received more care and study than all others taken together. One of these bulls introduced any where will tell greatly upon the future character of all the stock brought under its influence.

No. 1.—Champion.—Red, calved May 21st, 1868. *Sire*, Royal Duke of Oxford, 4377 Am. B. *Dam*, Candanza, by Lord Mayor of Oxford, 4364, whose lineage is traced through the bulls Duke of Gloster, Lord Brawith, Prince Ernest, Count Miracle, Fitz-Richard, Fitz-Roune, to Duke (119) and Whitworth (192), many of them famous sires of superior stock.—Price \$500.

No. 2.—Malcolm.—Rich ram: calved May 1st, 1863. *Sire*, Baron of Oxford, (2376 E. H. B.) *Dam*, Manolo, by 2d Duke of Thorne (1748), her pedigree running back to those of the world's noblest and purest blood, and to the famous bulls Hubback, Snowdon's, Masterman's, and the Stindley bull in all 19 recorded Herd Book crosses.—Price \$500.

Nos. 3 to 11.—Ayrshire Bulls.—Ayrshires are especially distinguished for the milking qualities of the cows, which uniformly yield milk in large quantity and usually rich. The stews and dry cows make excellent beef. Their size is medium, and colors usually red and brown, spotted with white. The animals offered are selected from two of the best herds in the country. That of Mr. Wm. BARNIE, of Springfield, Mass., is one of the oldest and most celebrated, while that of the Messrs. S. M. & D. WELLS, of Wethersfield, Ct., has a more recent fame. The cows of the latter herd probably give a larger quantity of milk, the year through, than any other equal number of cows in the country. All Ayrshires give a large quantity of milk compared with the amount of feed. The bull Aleck Cristie, sire of all the animals offered to the Messrs. WELLS' herd, is out of Dolly 3d, whose yield of milk the present year averages as follows: March, 48 lbs. per day; April, 60½ lbs.; May, 51; June, 54½; July, 49; Aug. 46. The milk of Aug. 9th, 10th, 11th, and morning of 12th, 3¼ days, made 7 lbs. of butter. Greatest yield of milk in one day, 57 lbs.

BRED BY MESSRS. S. M. & D. WELLS.

No. 3.—Werner. brown and white, calved April 8, 1868. *Sire*, Aleck Cristie, out of Dolly 3d, by John Anderson. *Dam*, imported Queen 2d, winner of four first prizes in Scotland.—Price, \$150.

No. 4.—Bull Calf, Duke of Hartford. red with little white, calved June 2d, 1863. *Sire*, Aleck Cristie. *Dam*, Flora 3d, winner of first prize of N. E. A. S. C. at New Haven, 1863. *Grand-dam*, Flora 2d, winner of first prize of N. E. A. S. C. in 1861; *Great Grand-dam*, imported Florida, winner of 1st Prem. and Sweepstakes of N. E. A. S. C. in 1860. Price, \$300.

No. 5.—Bull Calf, McKeown. red and white, calved Aug. 1st, 1867. *Sire*, Aleck Cristie. *Dam*, imported Minna. Price, \$300.

No. 6.—Bull Calf, Malvern. red and white, calved April 28, 1868. *Sire*, Aleck Cristie. *Dam*, Daisy 3. Price, \$300.

BRED BY MR. BARNIE.

No. 7.—Dugal Grant. dark brown and white, dark about the head, calved Feb. 1, 1868. *Sire*, Malcolm, 251. *Dam*, imported Miss Morton, 1863. Price, \$150.

No. 8.—Johnny Groat. red and white in large spots, calved Feb. 1st, 1866. *Sire*, Honest John, 199. *Dam*, Sae, 750. Price, \$150.

No. 9.—John Brown. red and white, calved Aug. 30th, 1867. *Sire*, Honest John, 199. *Dam*, Pezzie, 691. Price, \$150.

No. 10.—Bull Calf. red and white, calved September 6, 1868. *Sire*, Honest John, No. 199 in Ayrshire Herd Book; *Dam*, Pezzie, 691. Price, \$80.

No. 11.—Bull Calf. red and white, calved Aug. 18th, 1868. *Sire*, Honest John, 199. *Dam*, Dolly Dutton, 343. Price, \$80.

Nos. 12 to 15.—Alderney Bulls.—This valuable breed is distinguished for richness of milk, and golden yellow, waxy, high-flavored butter. The cows are almost always good, and occasionally deep milkers; size below medium; colors various; skin rich orange yellow. Steers and dry cows fatten easily. Those offered as premiums are selected from the herd of Mr. JAMES P. SWAIN, of Bronxville, N. Y., one of the oldest Alderney breeders in the United States, who has spared no pains to improve his stock in every way. These are bred with the highest fancy marks—no white spots; noses, mouths and tongues black.

No. 12.—Wachusett.—French gray and black; calved March, 1867; *sire*, imported Bashan; *dum*, Hecy, by imported Saturn, out of Lophom. Price, \$350.

No. 13.—Acutinity.—Brown, with squirrel-grat hairs; legs fawn color; calved March 17, 1868; *sire*, imported Bashan; *dum*, Bronx 2d, by imported Saturn, out of imported Bronx. Price, \$300.

No. 14.—Ossipee.—Dark brown, with squirrel halber; legs dark fawn; calved March 14, 1868; *sire*, imported Bashan; *dum*, Islip, by Maitland bull, out of Bird cow. (Imported.) Price, \$300.

No. 15.—Alleghany.—Blackish-brown, with squirrel hairs; legs dark fawn; calved March, 1868; *sire*, imported Bashan; *dum*, Katy 3d, by Dorby; he by imported Saturn, out of Lophom. Price, \$300.

No. 16 to 21.—Cotswold Sheep.—Long-wools.—One of the largest mutton breeds. Rams frequently weigh 400 pounds or more. This breed is famous for early maturity, large size, and ease of fattening. The quality of the mutton is good; the wool is very long and silky, and "common long combing" is now bringing the highest price of any wool in the market. The flock of Mr. BENNETT LOOMIS, of Windsor Locks, Ct., from which our premiums are selected, has swept all the chief prizes for long wool sheep, at the New England Agricultural Society fairs, from 1850 to the present year. Mr. L. has made repeated importations from the best English flocks. The sire of all but one of the sheep offered is Emperor 2d, bred by Robert Garne, North Leach, England, and purchased at his sale when a yearling for 130 guineas!

No. 16.—Cotswold Ram (No. 45.) Got by imported Emperor 2d, out of imported ewe bred by Robert Garne, Esq. Price \$300.

No. 17.—Cotswold Ram (No. 48.) Got by imported Emperor 2d, out of ewe imported from flock of Robert Garne, Esq. Price \$300.

No. 18.—Cotswold Ram (No. 2.) By imported Senator, out of ewe by ram bred by F. W. Stone, Canada. (Senator was bred by Robert Garne, Esq., and won the prize for best ram of any age at the New England Society fair in 1863. Also first prize as a two-year old, Price, \$100.)

No. 19.—Cotswold Ram (No. 30.) Got by imported Emperor 2d, out of ewe bred from imported stock. Price \$100.

No. 20.—Cotswold Ewe. By imported Emperor 2d, out of ewe bred from imported stock. Price \$100.

No. 21.—Cotswold Ewe. By imported Emperor 2d, out of ewe bred from imported stock. Price \$100.

Nos. 22 to 28.—Choice Fowls.—The 120 fowls offered as premiums are from the flock of Mr. JNO. H. MABRETT, of Tarrytown, N. Y., one of the most successful and careful breeders of our acquaintance. A rare opportunity is here offered for obtaining very superior fowls of some of the most highly prized breeds.

... La Fleche, Houdan, Crevecoeur, (French Fowls.) large, easy fattening, excellent for the table, and persistent layers—great favorites are all imported or bred direct from imported stock.... Black Spanish, (all white faced) stand first as constant layers, very ornamental and stylish, require warm winter quarters.... Brahma, large fowls, hardy, winter hawks, chickens very early and easy to raise.... Shriest Brahma, very small, with beautifully marked plumage; cocks and hens feathered alike; purely ornamental; hardy and easily raised. The last three kinds are from his own justly celebrated stock. We have only ten pairs of each.

No. 22.—La Fleche Cock and Hen. Price \$40.

No. 23.—Houdan do. do. Price \$40.

No. 24.—Crevecoeur do. do. Price \$40.

No. 25.—Black Spanish do. do. Price \$25.

No. 26.—Brahma, Light do. do. Price \$15.

No. 27.—Brahma, Dark do. do. Price \$15.

No. 28.—Gold Laced Sebright do. do. Price \$15.

No. 29.—Early Rose Potatoes.—This remarkable variety has awakened so much interest throughout the country that there is a general desire to get a few as a start for seed. A few hundred people only have been able to get them. We have, therefore, arranged with Messrs. B. K. Bliss & Son to supply us with a quantity of the genuine article, put up in 3 lb. parcels, to be by mail, post-paid, to any part of the country. They should go out before frost sets in, when too late for this, we will keep them until warm enough to mail them in Spring. This premium can only obtain open so long as the supply lasts. For some account of

the Early Rose, see page 336 of the *Agriculturist* for this month (October), and Messrs. Bliss & Son's advertisement in same paper. We send to clubs of four at \$1.50 each, which will give the canvasser 3 lbs. For fourteen subscribers at \$1.50 each, we will send four 3 lb. packages.

No. 30.—Garden Seeds.—A valuable selection of 40 varieties of the best seeds for a family garden, each parcel large enough for a garden of ordinary size. This premium and the next are put up for us by Messrs. B. K. Bliss & Son, Seed and Horticultural Warehouse, 41 Park Row, old Agricultural office, where seed establishment is well known as one of the best in the country. This premium will be of great value and convenience to many, as we send the seeds post-paid to any part of the United States. In many cases the recipient will have some to spare to members of the club.

No. 31.—Flower Seeds.—Like No. 30, this is a valuable premium. It consists of 100 different kinds of beautiful flower seeds, all in separate papers, and includes not only the finer common varieties, but many of the newer and rarer kinds that are costly when bought by the single paper. *Delivered free*, same as No. 30.

No. 32.—Nursery Stock, Plants, etc.—This premium can be selected in anything desired, from the Catalogues of Parsons & Co., Flushing, N. Y., or of F. K. Phoenix, Bloomington, Ill. Both are well known, very reliable parties, having extensive Nurseries, Green-Houses, Ornamental Trees and Plants, Grape Vines, Shrubs, etc., etc. Send a stamp direct to either of them, for their regular catalogues; if about this premium, they will go free. For this premium any one can select from the catalogues \$20 worth, or more in proportion, if more names are sent us, and we will send to the canvasser an Order for the amount on either party named above, in fall or spring, as desired.

No. 33.—Set of Field Croquet.—The game of Croquet is so pleasing, and has become so popular, that we believe many will be glad to avail themselves of the opportunity of obtaining this new Premium upon terms as easy as we propose. The sets we offer are beautiful, and from one of the best makers in the country. The balls are rock maple, and every set is newly finished and put up in a thoroughly made box, with separate places for balls and bridges. A very little labor will secure this fine Premium, valuable to both sexes.

No. 34 to No. 40.—Sewing Machines.—We offer a choice of the leading good Sewing Machines, and recommend any one of them as of great value. Each of these seven machines has some peculiarities in which it is superior to the others. We have used them all at home during the last seven years, except the Tailoring Machine, and that we have watched carefully in the hands of others. We would not part with the last one of these, which we might be able to get without any Sewing Machine, for \$500! The \$500 at 7 per cent. interest, would yield, less taxes, about \$32. Most families require at least 4 months of steady hand-sewing a year, costing, if all hired, not less than \$24 a month, board included, or \$96 a year. With a Sewing Machine a woman can sew more in one month than in four months by hand. Here is a clear saving of \$72. But far above this. The everlasting "Stitch, stitch, stitch," hended over the work, and less of sleep, have brought tens of thousands to early graves, broken down millions from an early age, and entailed enfeebled constitutions upon many millions of infants. We say to every man, get your wife a Sewing Machine, even if you have to sell a favorite horse or an acre or two of land. A Sewing Machine costing \$55 to \$65 involves an interest of only 83 or 84 a year; it will, in the long run, save you five, if not a hundred, fold, in Doctor's bills alone. Get the Sewing Machine any way. If you can get one through our premium list, well, get the machine. Every machine is boxed and delivered free to railroad or express, or other place in this city, and costs the recipient only the freight. They go safely as freight. Full printed instructions go with each, and each machine is supplied with a Hemmer. Send for circulars to:

Wheeler & Wilson Mfg Co., 625 Broadway, N. Y. City. Grover & Baker Mfg Co., 405 Broadway, N. Y. City. Howe & Company, 199 Broadway, N. Y. City. Florence Sewing Machine Co., 503 Broadway, N. Y. City. Singer Manufacturing Co., 458 Broadway, N. Y. City. Willcox & Gibbs Mfg Co., 508 Broadway, N. Y. City. Finkle & Lyon Company, 587 Broadway, N. Y. City.

No. 41.—Washing Machines.—For a long time we have annually tried many new Washing Machines, and "Duffy's Paragon," which we have now used nearly four years, is the only one the "help" will use voluntarily. Send for full descriptive Circulars to R. C. Browning, 32 Courtland-st., N. Y., or to Metropolitan Washing Machine Co., Middlefield, Ct. It packs in small compass, and goes cheaply by freight or express.

No. 42.—Clothes-Wringing Machine.—A very useful, time-saving, strength-saving, clothes-

saving implement, that should be in every family. The wringing of clothes by hand is laid upon the hands, arms, and chest, and the twisting stretches and breaks the fibres with lever power. With the Wringing Machine, the garments are passed rapidly between elastic rollers, which press the water out better than hand wringing, and as fast as one can pick up the garments. A child of 10 or 12 years can quickly wring out a tub-full of clothes. We offer the family size, "A Universal Wringing," with *Cogs* which make the rollers turn together, and prevent injury to the fabrics, loosening the rubber, etc. Weighs only 15 lbs., and can be readily carried by hand, or sent by express, or by freight, anywhere. We have over thousands of these as premiums, with almost universal satisfaction. Thousands of families may each get a premium one this year. They are made by the Metropolitan Washing Machine Co., Middlefield, Ct.

No. 42—A Tea Set.—This premium has given the greatest satisfaction for the last three years. There are six pieces, viz.: *A Coffee Pot, two Tea Pots, a Creamer, Sugar, and Stop Dish*—all of beautiful, uniform pattern, new style, with raised and embossed figure work. They are not the common silver-washed articles, but the heaviest plate, equal to "Sheffield Plate," the foundation being white metal, so as not to show, even when the heavy silver-coating may chance to be worn off in any spot by long hard usage.—These Sets are made by the Lucius Hart Mfg. Co., of Nos. 4 and 6 North Silver St., N. Y. City. Mr. Hart, "the veteran Sunday School man," has been in the same place and business for nearly a quarter of a century. We have known him and his work for many years, and take pleasure in commending and guaranteeing its value to be as represented. The amount of silver on plated ware depends wholly upon the will and integrity of the manufacturer. We could give nearly as good looking plated ware for less than half the money. The Sets given as premiums are boxed without charge, and sent to any place by express or otherwise as desired.

No. 41—Caster and Fruit or Cake Basket Combined.—This is a new pattern, both novel and beautiful. It can be used as a large, showy, Caster, with six cut glass bottles, or be instantly changed into a complete Caster, with Call Bell, and a separate Cake or Fruit Basket, with a colored glass dish inside. Every one receiving it will be delighted. It is from the same makers as No. 43, the same metal, plating, etc., and is sent in the same way. Many lower-priced and less beautiful Casters could be obtained, but we select the best.

No. 45—Ice or Water Pitcher.—A large and ornamental article. It is of the same metal, plating, etc., as the same makers as No. 43. For 33 subscribers at \$1.50 each, we will add a large Salver of pattern to come and (value \$60); or, for 47 subscribers, a large 16-inch oval Salver, (value \$14), large enough for two goblets with the Pitcher; and for 53 subscribers, the Pitcher, large Salver, and a pair of beautiful Goblets, silver-plated without, and gilded within (value \$38). This complete Set is exceedingly desirable, though the Pitcher alone, or that and the smaller Tray or Salver, will answer a good purpose, both for use and ornament.

No. 46—One Dozen Teaspoons.—These are of fine pattern, "figured tips," Olive-leaf Pattern, all of the same metal, plating, etc., and from the same makers as No. 43. They are far cheaper than any thing we have found at half the price.

No. 47—One Dozen Table Spoons.

No. 48—One Dozen Table Forks.—The description and remarks apply to these as to No. 46. We select as premiums only the best articles, and can warrant every way in quality and price. All these articles come from the Lucius Hart Manufacturing Co.

No. 49, 50, 51.—Knives and Forks.

The knives offered in this premium are from the most celebrated makers of cutlery in the world, Joseph Rodgers & Sons, Sheffield, England, whose corporate mark is dated 1761. They are of the best refined steel, with ivory balanced handles, and stamped with full address of makers; size known as table knives.—The table forks are manufactured by Holmes, Douth & Haydons, on genuine albat, and warranted double plated with coin silver. The tea knives and forks are by the same makers, but of smaller size. The carving knife and fork are both steel, made by Rodgers & Sons, best ivory balanced handles. For 33 subscribers, at \$1.50 each, we will send the tea knives, of the same make and material, double silver plated, forks the same, (value \$26). For 43 subscribers, at \$1.50 each, we will send the table knives, double silver plated, with same forks, (value \$30). These articles are furnished to us by Messrs. Patterson & Brothers, 27 Park Row, agents for the manufacturers, and a thoroughly established and reliable house, who will furnish the above articles at prices named, and express charges paid to any who may wish to purchase. (Send for their circulars.)

No. 52, 53—Melodeons.—These are excellent and desirable instruments, for the Home Circle, for Sunday Churches, for Sunday Schools, for Day Schools, Academies, etc. Instrumental and Vocal music in a school has a beneficial influence upon the pupils. We have seen the whole tone and character of the pupils of a school improved by introducing a Melodeon.—Set the pupils to work and they will raise a club of subscribers for this premium. We offer Geo. A. Prince & Co.'s Melodeons, for we know them to be good. A large one in our own Sunday School room has been in use for nine years, and is to-day just as good as when first purchased, though used from time to time by a large number of persons.—Several clergymen have obtained this premium for themselves, their Churches, or Sunday School rooms. The premium clubs of subscribers were quickly raised among the members of their parishes.—Many others can get this premium for their own home use. We have given these instruments as premiums for several years, and we believe they have invariably been highly esteemed. Send a postage stamp to Geo. A. Prince & Co., Buffalo, N. Y., and their detailed description, circulars, giving full particulars of Franes, sizes, and prices. The premium Melodeons will be shipped direct from the manufactory at Buffalo, ready boxed for safe transportation by Railroad, Steamboat, or by Express, as ordered. They go just as safely by freight, as by express.

No. 54—Steinway Piano.—SEVEN OCTAVE, ROSEWOOD CASE; SOLID ROSEWOOD DESK, LARGE FRONT, ROUND CORNERS; OVERSTRUNG BASE, FULL IRON FRAME, PATENT AGRAFFE TABLE, GOTHIC LEGS, AND CARVED LYRE.—This is one of the most elegant Premiums ever offered; regular and only price \$650. That this magnificent instrument comes from the celebrated establishment of MESSRS. STEINWAY & SONS, Nos. 71 and 73 East 14th street, is enough to say; but it is due to those enterprising manufacturers to state that, while their pianos have repeatedly received the FIRST PREMIUMS by the award of the most competent judges the world can produce, at the Universal Exposition, in Paris, they received the FIRST GRAND GOLD MEDAL for American Pianos in all three styles exhibited, viz.: Grand, Square, and Upright. The following official certificate was signed by the President and the five members of the International Jury: "Paris, July 20th, 1857. I certify that the First Gold Medal for American Pianos has been unanimously awarded to Messrs. Steinway by the Jury of the International Exhibition. First on the List in Class X." The Society of Fine Arts, in Paris, unanimously awarded Steinway & Sons their only annual Testimonial Medal for 1857. The President of the Musical Department of that society reports: "The Pianos of Messrs. Steinway appear to me, as well as to all the artists who have tried them, superior to all that have been made to this day in the entire world." The best judges in America say the same. We also present to our partners as each of our partners has one at home, and desires no better. This splendid premium may be secured by many persons. Only 540 subscribers are required to do it. One lady obtained two and sold them, and several others one each, during last year, in 1 to 3 months. It will pay for every year's labor. Classes of young ladies at school might unite in canvassing, and obtain a present for a Teacher, or a Piano for their schoolroom. We shall be glad to give this premium to a large number. Who will try for it? and to Messrs. Steinway & Sons for a free circular describing it.

No. 55—Colibri Piano.—This is a newly invented Piano, the work of Mr. Frederick Mathushek, who has for many years been known among manufacturers as the author of some of the best improvements introduced into the piano. It is only 4½ feet long, 2½ feet wide, of the square form, yet having 7 full octaves. Some eminent musicians examined it at our request, and pronounced it an instrument of remarkable power, brilliancy, and sweetness. H. Mollenhauer, Director of the Conservatory of Music, New York, says: "Their tone is truly astonishingly sweet, pure, and powerful, and so greatly superior to all others, that they must be heard to form a just conception of their superior excellence." Its peculiar construction secures improvement in the sounding quality, durability, etc. It is finished in handsome style, with rosewood case, large round corners, fancy scroll desk, legs, lyre, etc., and will be an ornament in any parlor, besides being entirely satisfactory as a musical instrument. Other styles are made by the same firm, but this was selected as especially adapted to the wants of many of our readers. Messrs. Barlow, Doehler & Co., 634 Broadway, N. Y., are the agents, and will send circulars, giving full particulars.

No. 56—A Good Watch.—The American Watch Co., of Waltham, Mass., is now so well and so favorably known that the statement that a watch is of their manufacture will be regarded as a sufficient guarantee of its value. We have arranged with that Company to make for us a Silver Watch, jewelled with chronometer balance, and warranted by them to be made of the materials in the best manner, and in pure coin silver "hunting" case; weight 3 oz. This watch we offer as one of our Premiums, with the fullest confidence that every one who secures it will obtain a valuable Time Piece, in every way reliable. Upon the movement of each of these watches will be engraved, "American Agriculturist, Made by the American Watch Co."

No. 57—Ladies' Fine Gold Watch.

This elegant Premium will delight our friends who may receive it. Our arrangement with the American Watch Co. (see No. 56 above) includes the manufacture of these beautiful gold watches. They are all jewelled, in 18 carat "hunting" or closed cases, warranted by that Company to be made of the best materials, and possessing every requisite for a reliable Time Keeper. As in the case of the Silver Watches, upon the movement of each Premium watch will be engraved "Am. Agriculturist, Made by the Am. Watch Co." Here is a beautiful gift for a friend, which is within the reach of many.

No. 58—Double Barrel Gun; or

Twist Barrel.—These guns are the genuine London "Twist" barrel, Patent Breech, Bar Lock, open ramrod, and all respects deserving the highest commendation. The manufacture of barrel vary, and may be ordered to suit the kind of shooting to be done. As a special favor they are furnished for this premium, by Messrs. Cooper, Harris & Hodgkins, 177 Broadway, well known as one of the most reliable and best houses in their line of business, and they highly recommend this particular gun, and guarantee it in every respect. It is from one of the oldest and most favorably known English manufacturers. Mr. Cooper assures us that it is just the gun he should take if he were going out for a day's shooting. The price is not put on in fancy carving, and plating for show, but in the gun itself. We could get more fancy looking guns for half the sum, but we offer only real, reliable articles, those cheap at the prices named. This premium includes Gun, Powder-Flask, Shot-Pouch, and Wad-Cutter.

No. 59—Roper Repeating Shot

Gun.—Bang, Bang, Bang, Bang—four times in 4 seconds! This gun just meets the wants of sportsmen. It is a splendid shooter, is fired four times without re-loading, the cost of ammunition is no more than for a muzzle loader, it is very light, (6½ lbs.), and the charges are waterproof. The barrel is steel, 23 inches long, with a receiver at the breech, into which four charges, each in a steel case, are placed at once, and are carried into the barrel separately simply by cocking the piece. A Belt, 21 Shells, Wiper, Loader and Loading Block, accompany the Gun. This gun is highly recommended by distinguished sportsmen, and is easily managed even by boys. It is made by the Roper Repeating Rifle Company, Amherst, Mass., under the supervision of C. M. Spencer, Esq., inventor of the famous Spencer Rifle, who will furnish full circulars.

No. 60—Chest of Good Tools.

We continue, through the special favor of Messrs. PATTERSON BROTHERS, of 27 PARK ROW, the offer of chests of the very first quality of tools, of kinds and prices named below. The same tools could be purchased for half the money, but these are all A. No. 1, for practical use, and worth a dozen common articles. For this we have the guarantee of Messrs. Patterson, which is amply sufficient for us, and for all who know them. They make up assortments of these, or any part of them that may be ordered at the prices named, and will send you one on purchase of them what they desire. We make up only a single premium, which contains a full assortment for all common purposes. The tools are of regular size, and but few additions would be required for a Journeyman Carpenter. The assortment of our premium is as follows: Plain chest, 31x16½x16 inches, with sliding compartment box, 27 Jack Plane, \$1.60; Smooth Plane, \$1.45; Jointer Plane, \$2.25; Hand Saw, 23 inches, \$1.75; Compass Saw, 10 inch, 70c.; Compasses, 6 inch, 30c.; Wren's Hammer (adv. edge) \$1.50; Hammond's Hatchet, 35c.; Drawing Knife, \$1.25; Try Square, 6 inch, 35c.; Bevel, 5 inch, 30c.; Chalk Line and Sash, 25c.; 12 inch, 25c.; Pair of Pliers (liners) 25c.; Sliding Tongs (pinchers) 25c.; Calipers, 3½ inch, 35c.; Braces, 65c.; Augur Bits for Braces, ¼ inch, 25c.; ½ inch, 45c.; ¾ inch, 75c.; Center Bits, 1 inch, 21c.; 2 inch, 25c.; 3 inch, 25c.; 4 inch, 25c.; 5 inch, 25c.; 6 inch, 40c.; Six Gimlet Bits, 15c.; 14 inch, 30c.; 1½ inch, 40c.; 3 inch Screw-driver in Handle, 30c.; Three Gimlets in Handles, assorted sizes, 35c.; Screw-driver Bit, 35c.; Flat Countersink Bit, 25c.; 35c.; 40c.; 25c.; 30c.; 35c.; 40c.; 45c.; 50c.; 55c.; 60c.; 65c.; 70c.; 75c.; 80c.; 85c.; 90c.; 95c.; 100c.; 105c.; 110c.; 115c.; 120c.; 125c.; 130c.; 135c.; 140c.; 145c.; 150c.; 155c.; 160c.; 165c.; 170c.; 175c.; 180c.; 185c.; 190c.; 195c.; 200c.; 205c.; 210c.; 215c.; 220c.; 225c.; 230c.; 235c.; 240c.; 245c.; 250c.; 255c.; 260c.; 265c.; 270c.; 275c.; 280c.; 285c.; 290c.; 295c.; 300c.; 305c.; 310c.; 315c.; 320c.; 325c.; 330c.; 335c.; 340c.; 345c.; 350c.; 355c.; 360c.; 365c.; 370c.; 375c.; 380c.; 385c.; 390c.; 395c.; 400c.; 405c.; 410c.; 415c.; 420c.; 425c.; 430c.; 435c.; 440c.; 445c.; 450c.; 455c.; 460c.; 465c.; 470c.; 475c.; 480c.; 485c.; 490c.; 495c.; 500c.; 505c.; 510c.; 515c.; 520c.; 525c.; 530c.; 535c.; 540c.; 545c.; 550c.; 555c.; 560c.; 565c.; 570c.; 575c.; 580c.; 585c.; 590c.; 595c.; 600c.; 605c.; 610c.; 615c.; 620c.; 625c.; 630c.; 635c.; 640c.; 645c.; 650c.; 655c.; 660c.; 665c.; 670c.; 675c.; 680c.; 685c.; 690c.; 695c.; 700c.; 705c.; 710c.; 715c.; 720c.; 725c.; 730c.; 735c.; 740c.; 745c.; 750c.; 755c.; 760c.; 765c.; 770c.; 775c.; 780c.; 785c.; 790c.; 795c.; 800c.; 805c.; 810c.; 815c.; 820c.; 825c.; 830c.; 835c.; 840c.; 845c.; 850c.; 855c.; 860c.; 865c.; 870c.; 875c.; 880c.; 885c.; 890c.; 895c.; 900c.; 905c.; 910c.; 915c.; 920c.; 925c.; 930c.; 935c.; 940c.; 945c.; 950c.; 955c.; 960c.; 965c.; 970c.; 975c.; 980c.; 985c.; 990c.; 995c.; 1000c.

Nos. 61, 62—Mathematical Instruments for Draughting, Drawing, etc.

Very convenient, not only for architects and mechanics, but for farmers and others, and for Boys and Girls. These are neatly fitted in beautiful Rosewood Cases, having

dividers with flexible joints, and points, semi-circles, pencil and penholders, rulers, etc., etc. All the pieces in No. 61 are finished in brass and steel; those in No. 62 are German silver and steel. The pieces are the same in each, but No. 62 is of extra beauty and workmanship. They are useful in making drawings, plans of buildings, fields, etc. They are valuable to children, to cultivate a taste for, and habit of observing and sketching farms, plotting fields, orchards, buildings, for drawing, etc. Such "playthings" keep them from "mischiefs," develop their minds, and make them "handy." Sent by mail, postpaid, to any place in the United States.

Nos. 63, 64—Dawson, Warren & Hyde's Gold Pens.—With EVER PORTER, PEN-CASE, IN EXTENSION CORN SILVER CASE. Premium No. 63 contains the best E Gold Pen, and No. 64 the best P Gold Pen, which is the same style, but larger. These pens are made by Messrs. Warren & Spadone, No. 4 Maiden Lane, N.Y., successors to Dawson, Warren & Hyde, whose pens obtained so wide and good a reputation that the original firm came in the Trade Mark and is still stamped upon every pen made. We have known the makers and their goods for many years, and can recommend both to our readers. W. & S. are the largest manufacturers of Gold Pens, Silver and Gold Pen-Cases and Holders, in the country. That whether a stiff or limber point is desired, and if the Pen received does not suit the hand, it may be exchanged at a trifling expense for postage.

Nos. 65, 66—Mercurial Barometers.—WOODRUFF'S PATENT, made by CHAS. WILSON, Fitchburg, N. H. These are the most convenient and portable Mercurial Barometers made. Send to Mr. Wilder for a circular giving engravings and descriptions of the instruments. The peculiar form of Mercury cup invented by Mr. Woodruff renders these far more portable than any Mercurial Barometer previously known. They are so easily carried that Mr. Wilder guarantees the safe delivery of every Barometer given by us as a Premium, if not to be sent beyond the Rocky Mountains. The instruments are beautifully made, are about 3 feet long, and are packed and sent direct from the factory, with no expense save the express charges. We offer two forms which differ mainly in the style of case, both being supplied with *Thermometer and Ventilator*. A Barometer is to farmers, or others on land, what it is to sailors, as an indicator of the weather to be looked for. Many who have received this premium from us in former years have given us definite statements touching its great value to them. Aside from its direct utility, the habit of observation and of scientific study, cultivated in children where a Barometer is used, is important.

No. 67—Buckeye Mowing Machine.—The Buckeye Mower is so widely and favorably known that we need not describe it particularly. Messrs. Adiranda, Platt & Co., 165 Greenwich-st., N. Y. City, will send any one a circular giving full description, engravings, etc. The experience of last year shows that many a farmer can easily secure this premium by a very few days' or odd hours' and evenings' canvassing for subscribers. A few can unite their efforts, each getting a part of the subscribers, and then own the machine in common.—It would pay a man well to canvass for this premium, and sell it. Ten subscribers a day for 15 days would secure the premium, which sells regularly for \$125.—Many can, at town meetings, fairs, elections, and other gatherings, or during evenings, easily secure this premium club.

No. 68—Cylinder Plow (Allen's Patent).—We hear very good reports from those who received this premium last year. It is named from the peculiar form of the mould-board. It is an Ohio invention, but is manufactured by the well-known firm of R. H. Allen & Co., 189 & 191 Water-st., New York, to whom application may be made for descriptive circulars, etc. There are several sizes and prices, with a greater or less number of attachments. The kind we offer for premiums is the "Two-horse size, cutting a furrow 12 to 14 inches wide, and 5 to 8 inches deep." It is provided with wheel, and with a "skim plow," like the double "Michigan plow."

No. 69—Collins & Co.'s Cast Steel Plows.—These excellent plows are made by a patented process, of cast-steel recast (not rolled), tempered and polished like a good axe. They will come in the softest soils, and are great favorites on the prairies. The canvasser has his choice of eight plows named in the manufacturers' circular at the same price (\$25), of which we particularly recommend "C. No. 3" for general use; "B. No. 12" for stable only, and "E. No. 12" for turf only. Send for circular, giving full particulars, to Collins & Co., No. 212 Water street, New York.

No. 70—Page's Patent Pump and Sprinkler.—A Hand Watering Pot, a Green-house Syringe, a Light Force Pump, and Garden Engine. It is very simple in construction, light to carry, easy to operate, and adapted to a great variety of uses—convenient for

washing windows, or blinds, carriages, horses, watering plants, etc. Throws a small stream with considerable force about 40 feet, and will be invaluable in case of an incipient fire. By a very simple arrangement, the stream can be quickly changed to drops, spray, or mist. Manufactured by the New England Portable Pump Company, 11 Hanover-st., Boston, Mass. Send for Circular.

No. 71—Family Scales.—These scales, combining the advantages of counter and platform scales, are peculiarly adapted to household purposes. They weigh from 1½ ounce to 240 lbs. They have a scoop or pan for weighing flour, sugar, and other house stores, and a platform for heavier articles, and are just such an apparatus as is needed for in-door or out-door use, occupying less than 2 feet space. In cooking, preserving, keeping the weight of the grocer, butcher, etc., and in weighing meats, butter, and other produce sold from the farm, they will save much more than the cost of obtaining them as a premium. These scales are manufactured by the well-known Fairbanks & Co., whose weighing apparatus has long ranked as the standard, and who received the highest premiums, two medals, at the Paris Exposition.

No. 72—Crandall's Improved Building Blocks furnish a most attractive and economical way of building. They are very simple in construction, will stand years of children's handling without breaking, and give renewed pleasure daily. Churches, Dwellings, Barns, Mills, Fences, Furniture, etc., in almost endless variety, can be built with them, and the structures require so firm as to be carried about. For developing the ingenuity and taste of children they are unequalled. The Blocks are put up in neat boxes, and with each box is a card giving various designs of buildings. The Premium sets are plain. The same blocks may be had, maple finished, by sending 3 more subscribers, at \$1.50 each, or 10 more, at \$1 each. Send for a descriptive show-bill.

No. 73—Pocket Lanterns.—A very ingenious valuable Yankee invention—a complete *Lantern*, large enough to afford light for walking or other purposes, yet in half a minute it can be folded into a parcel 4 by 4 inches long, and 2 of an inch in thickness, or small enough for the vest pocket, yet contain 3 little sperm candles, matches, etc. We have used one for years, carrying it in the pocket on going out at night, ready for use at any moment. It is manufactured by the Merriam Man'g Co. Company, (Julius Ives & Co., Agents, 49 Maiden Lane, N. Y. City.) A dozen pack in a box 3½ by 5½ by 8½ inches.

No. 74—American Cyclopaedia.—ARLETON'S NEW.—We cannot commend this great work too highly. We wish it could be placed in every family in the country. Several were fortunate in securing it through our premium last year, and we hope many more will do so this. Scholars at our Academies and Seminaries, and members of Library Associations, can easily unite their efforts and secure it. Young men should devote evenings and spare hours to canvassing for this magnificent and useful premium for their own use. The Cyclopaedia is a *whole Library of itself*, consisting of sixteen very large octavo volumes, well bound, averaging 800 large two-column pages in each book, or in the whole, 12,804 pages! They treat upon over 25,000 different subjects. It is hardly possible to say in any way, any subject, any person, or note, in past or recent time, concerning which pretty full information may not be found in the Cyclopaedia. It embraces every topic of human knowledge, alphabetically arranged for reference.—Is worth a year's effort in raising subscribers.

No. 75—The Great Dictionary.—WORCESTER'S LARGE PICTORIAL UNABRIDGED EDITION, containing 1854 three-column pages, with a multitude of illustrative engravings. (The work is 12 inches long, 10 inches wide, and nearly 4 inches thick, and weighs about 10 lbs.) One of the most thoroughly educated men of the country consider this the best Dictionary to own in the English language. It gives the spelling and pronunciation of every word in the language with full explanations, and as a source of general information stands next to the Cyclopaedia. The Dictionary can be called for at our Office, or be sent by express or otherwise, to any part of the country. We have given away hundreds of copies as premiums, many of them obtained by quite young boys and girls. It should be in every family. It is published by Brewer & Tilton, Boston.

Nos. 76 to 81—Volumes of the American Agriculturist.—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-seventh Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are put up in clean numbers, with the Index to each volume.—They are profusely illustrated, the

Engravings used in them having alone cost about \$30,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from XVI to XXVII inclusive. For ordinary use, the sets of numbers unbound will answer quite well.—Many hundreds of these volumes are wanted every year as premiums.

Nos. 82 to 87—Bound Volumes of the Agriculturist.—These are the same as Nos. 76 to 81 above, but are neatly bound in uniform style, and cost extra for binding and postage. Sent post-paid.

Nos. 88 to 99—GOOD LIBRARIES.—In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any of the premiums \$8 to \$9, may select any books desired from the list below, to the amount of the premiums, and the books will be forwarded, paid through to the nearest Post-Office, or Express office, as we may find it most convenient to send them. \$25 or \$50 worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to make their heads help their hands. Any good book will, in the end, be of more value to a young man than to have an extra acre of land, on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres, than he would off from 50 acres without the mental ability which reading will give him.—Our premiums will enable many a family to secure a larger or smaller Library. Let the Farmers of a neighborhood unite their efforts and get an agricultural Library for general use.

No. 100—General Book Premium.—Any one not desiring the specific Book premiums, \$8 to \$9, on sending any number of names above 25, may select Books from the list below for the amount of 10 cents for each subscriber sent at \$1; or to the amount of 20 cents for each name sent at the (ten) club price of \$1.50 each; or to the amount of 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

BOOKS FOR FARMERS AND OTHERS.

[For sale at the office of the <i>Agriculturist</i> , or they will be forwarded by mail, post-paid, on receipt of price. 27¢ 41¢ these are included in our Premiums, Nos. 8 to 10 above.]	
Allen's (J. F.) Rural Architecture	\$1.50
Allen's (J. L.) American Farm Book	1.50
Allen's Discs of Domestic Animals	1.00
Am. Agricultural Annual, 1887 & 1888, each, pa. 50c.	.75
Am. Horticultural Annual, 1887 & 1888, each, pa. 50c.	.75
American Bird Fancier	.30
American Pomology—Applied by Dr. John A. Warder	.50
American Rose Culturist	.50
American Weeds and Esculent	1.00
Architecture, by Cummings & Miller	10.00
Architecture, Modern Art, by Cummings & Miller	10.00
Beck's Rabbit Culture	.25
Bonner's Method of Making Manure	.25
Book of Evergreens (J. Hoopes)	.30
Boyle's Husbandry	1.00
Breck's New Book of Flowers	1.25
Brooks' Flower Garden Dictionary	1.00
Bulst's Family Kitchen Gardener	1.00
Chorlton's Flower Grower's Guide	.75
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Cotton Planter's Manual, (Turner)	1.50
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Eastwood on Cranberry	.75
Elletts' Western Fruit Grower	1.00
Flax Culture	1.00
Field's (Thomas W.) Pear Culture	1.25
French Farm Husbandry	1.50
Fuller's Grape Cultivator, (Revised Edition)	1.50
Fuller's Strawberry Cultivator	1.50
Garrett on Small Fruits	1.50
Gardening for Profit, by Peter Henderson	1.50
Garden on Milk Cows	.75
Harris' Insects Injurious to Vegetation, etc., 81¢, cloth, 60¢	6.00
Harris' Domestic Animals	1.00
Herbert's Hints to Horsekeepers	1.25
Hop Culture	.40
How to Grow Apples, by W. Johnson	.40
Johnson's Agricultural Chemistry	1.25
Johnson's Elements of Agricultural Chemistry	1.50
Johnson's How to Build a Good Horse	1.50
Miles on the Horse's Foot	.75
Muir on the Grape Vine	.75
My Vineyard at Leveque	1.25
Norton's Scientific Agriculture	1.50
On Culture	.75
Our Farm of Four Acres (bound) 60¢	.80
Pardee on Strawberry Culture	.75
Parker's Use of Fertilizers	.75
Pedder's Land Measurer	.60
Percheron Horse	1.00
Peters' Mystery of Bull Dog Kelping (SKEEL)	1.00
Randall's Sheep Husbandry	1.50
Randall's Fine Wool Sheep Husbandry	1.00
Rivers' Miniature Fruit Garden	1.00
Richardson on the Dog, paper 50c., cloth, 60¢	.60
Roberts' Domestic Animals, 2 vols., 40¢	.40
Schickel's Gardener's Text Book	.75
Schickel's Housewife	.75
Sewers' (John) Stable Book	.75
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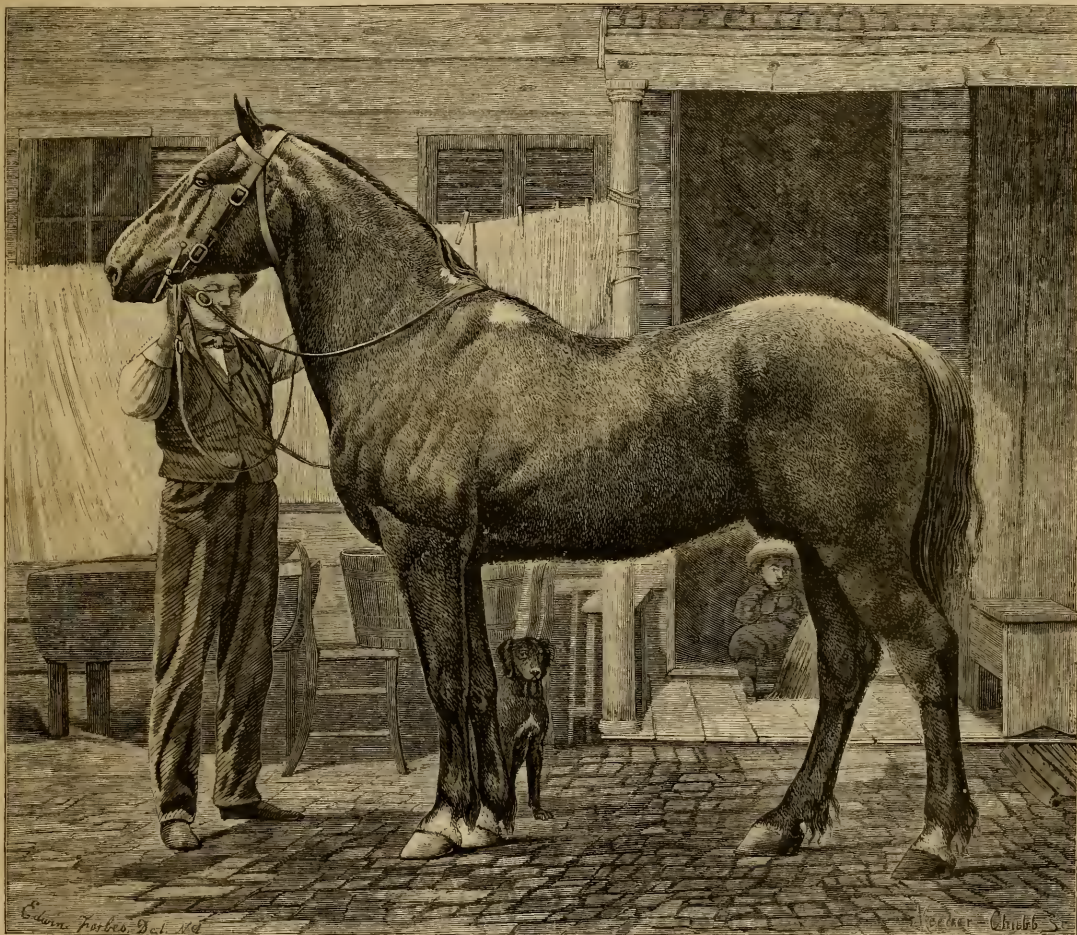
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NEW SERIES—No. 262.



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PERCHERON STALLION—IMPORTED BY JEFF. K. CLARK, ST. LOUIS, MO.—Drawn and Engraved for the American Agriculturist.

The interest excited in Percheron horses by articles which appeared in the *Agriculturist* some time since led Mr. Jeff. K. Clark, of Missouri, who was on the point of starting for Europe, to give especial attention to these horses while in France. He returned a few months since, bringing with him two stallions and two mares, which we saw while in New York, and were so struck with the beauty of one of the stallions that we had him photographed and engraved for the *Agriculturist*. The horse is five years old, 15 $\frac{1}{2}$ hands high, of

a nearly uniform dark iron-gray color, obscurely dappled. He is an animal of immense power, and very solid and heavy for his height; not fat, and not in the least logy in his gait; spirited, but docile and gentle. The photograph not only represents the horse correctly, but also the yard in which he was kept for several days. White spots on the back and shoulders indicate old harness galls, and that, as a colt, the horse was put to hard labor. This is, and for hundreds of years has been, the custom in Perche, and thus, it is claimed, a natural selec-

tion of the best breeding animals is constantly made; for, of course, those, both horses and mares, which cannot stand the hard, steady work they are put to, are not used as breeders. Even the young stallions are constantly managed and worked by women, and thus, in the course of generations, a docility and mildness of disposition become inbred, which is one of the most interesting peculiarities of this breed. We are exceedingly pleased with the Percherons, and fully believe that they are destined to be of great service to our agriculture.

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Back Volumes Supplied.—The back volumes of the *Agriculturist* are very valuable. They contain information upon every topic connected with rural life, out-door and in-door, and the last ten volumes make up a very complete library. Each volume has a full index for ready reference to any desired topic. We have on hand, and print from electrolyte plates as wanted, all the numbers and volumes for ten years past, beginning with 1857—that is, Vol. 16 to Vol. 26, inclusive. Any of these volumes sent complete (in numbers) at \$1.75 each, post-paid, (or \$1.50 if taken at the office). The volumes, neatly bound, are supplied for \$2 each, or \$2.50 if to be sent by mail. Any single numbers of the past ten years will be supplied, post-paid, for 15 cents each.

A Year of 13 Months.

Every New Subscriber to the American Agriculturist for 1869, whose subscription comes to hand during November, will receive the paper for December without charge, if the name be marked **new** when sent in. Take Notice, that this offer extends to **All New Subscribers**, whether coming singly, or in **Premium Clubs**, or otherwise.

AMERICAN AGRICULTURIST.

NEW-YORK, NOVEMBER, 1868.

The excitement and hurly-burly attendant upon an election for President of the United States will occupy the heads and hearts of a great number of our readers, so that those who come to these columns for advice, or to be reminded of the work before them, will very likely not take up this number until it has lain a week upon their tables. After the momentous question has been decided, the news read, re-read, well pondered, and the whole nation has settled down quietly and accepted the decision, then the farmers will have to bestir themselves to make up for lost time, before the setting in of winter. It is a bad plan to be in a hurry; even the farmer who has only one pair of hands to keep employed should have definite plans, and work according to them. Of course it is vastly more important for those who give employment to several laborers to lay out their work well ahead. Winter will come among the mountain valleys and forests of the North, while we, perhaps, are enjoying the bland, bracing weather of the late autumn. Sleighbells will jingle and keep time to the pace of mettlesome horses, dashing over frozen roads with happy sleigh loads of parents and children at Thanksgiving time in one State, while the children of another celebrate the same festival in summer clothing, playing upon the lawns, or rambling in search of nuts in the grove. Nevertheless, irresistible winter slowly and surely marches onward, and we should all be ready when he comes.

The harvests are abundant; prices of farm produce rule high; there is no pressure of famine, no short stock of any of the necessities, and hardly of the luxuries of life; our nation is bearing up manfully under what our enemies predicted would be a crushing load of debt, graciously paying it off; and upon every side evidences of personal and national prosperity meet us. With these blessings come responsibilities and accountabilities which we cannot avoid. This month, closing as it does the farmer's year of toil in the fields, and filling his heart with gladness, should remind us that we are not alone in the world, that all are not prosperous, so that receiving freely we should remember the good Giver, in bestowing freely of our surplus.

Hints about Work.

The order of farm work at the North is, first to secure crops still in the field, before freezing weather; second, to protect those already in store, as well as horses, barns, and manure stores from damage from any source; third, to put the farm in order for a sudden freezing up. Early winters come now and then, and shut down upon farm work just when a day or two more of out-door labor would save the laborers of months, perhaps, from loss.

Root Crops.—These continue to grow as long as the ground is open, but it is a poor plan to trust too long to the weather. No date can be fixed applicable to different latitudes, but at the North it will be wise to lose no time after the first of November, in harvesting roots of all sorts. *Turnips* will not be injured by the severest freezing, though they may be frozen up and not be available before next spring. They are wintered thus as they grew, and are ready for feeding or for market as soon as the ground opens. *Ruta-bagas* will bear more frost than white turnips, but neither should

be subjected to severe freezing. *Mangels* and *Sugar Beets*, though they bear, perhaps, an equal degree of cold without apparent damage, yet if they stand in the ground after they cease to grow, they become tough and woolly, and roots exposed to freezing, if not used soon, decay at the crown. Growth ceases with beets after a few sharp frosts; hence they should be dug and housed early. *Carrots* are also liable to injury from freezing, and the first frost that stiffens the soil should be a signal to harvest beets and carrots with alacrity, if not already done.

Potatoes.—In parts of the country where the digging of potatoes has been delayed, or where it is safe to wait so long as November, digging should be postponed no longer, but this valuable crop housed at once, or placed in frost-proof pits, such as were described in the Hints for Work last month.

Winter Grain.—Top-dressings are sometimes recommended for application early this month. These are of two kinds. One acts chiefly as a mulch, and is often very useful. Poor composts of sods, peat, etc., made with but little manure, or with lime, ashes, guano, fish manure, castor pomace, or something of that kind, if they have lain until fine and uniform, may be spread on pretty liberally, and the ground rolled. Guano or some fine "hand manure" may be sown on to quicken the growth of late crops, and to promote tillering when the stand is thin. Do not trust a common farm hand to plow the water furrows or surface drains about or across grain fields. Keep them nearly on a level, but with a uniform, slight fall.

Housing or Stacking Corn Fodder.—Corn stalks dry so slowly that it often takes all the fall weather of autumn to dry them. It is rarely safe to leave them in the field after the middle of the month, and they make much better fodder if housed as soon as they are dry enough. Whether in stacks or under "barnicks," lay the bundles with the tops inward, and inclined slightly upward, so that rain and thawing snow will all be carried off.

Buildings.—Look well to the roofs, eave-troughs, and weather boarding of all buildings. Where every thing is not snug and tight, a few nails will add greatly to the durability of barns and sheds. If *Stables* have only single outer walls, line them with bog hay, or other litter, stuffed between an inner boarding or lathing and the weather boards. This is a favorable season for outside *Painting*, as the weather is seldom so dry as to be very dusty. New paint is not disfigured by small insects, flies, etc., sticking to it, as often happens at other seasons.

Roads.—Employ spare time of men and teams in putting the farm roads in good repair, and protecting them against washing during thaws or rains.

Fences.—Tear away all fences not absolutely necessary. We believe that small farmers who keep only four or five head of cows and heifers can well afford to get chain-lethers for their animals and keep them tethered while grazing, rather than be at the expense of putting up many interior fences. Grain fields must be securely enclosed, and fences between neighbors and along the highway should be looked to, before the ground freezes, and weak posts strengthened by stakes, or reset.

Manure may be carted out if it can be spread and plowed in, or put into compost heaps with sods or muck, or even put in heaps and covered with two or three inches of soil. The swamps and roadsides, old fence rows and the woods, should contribute to the supply of material for composts to be made now, or to be worked up during the winter by mingling the vegetable mold with manure as it accumulates. To get rich, fine manure for spring grains, flax, garden use, and many other purposes, build up heaps, consisting of alternate layers of straw stuff, fresh manure, and litter, from the stables, and wet the whole now and then by pumping barn-yard liquor over it to saturation. It will all rot down before spring, and become fine and uniform. See article on sheltering manure, on page 403.

Hogs gain flesh and fatten very rapidly during most of this month. Feed regularly all they will eat, and only ground or cooked grain. Every few days it is well to mix a few handfuls of charcoal and ashes from a wood fire with their food, or to

throw them a little charcoal dust and corn mixed and slightly moistened. It keeps them in good condition, and sharpens their appetites. After hogs are fat enough to kill it is easy to keep them so a while, even in severe weather; but when it is very cold they must be in very warm quarters or they will eat a great deal and not gain a pound. This month is the time to prepare for a litter of pigs in March. These will be old enough to consume their share of milk when the cows come in.

Sheep should have dry sheds, sunny yards, and be fed from racks and troughs. Graining should commence as grass fails, and the flocks should be so divided that those placed together are of about equal strength. The high price of linseed cake and meal will prevent their use to a great extent. Corn is the natural substitute, and a good one, but it must be used with greater caution. Keep sheep constantly and gradually gaining. Ewes served in November will yearn in April; that is, in 150 days.

Horses.—It is a good plan to give farm horses the range of weedy stubble and other fields late in the season. They eat a great many weeds as other forage fails. We keep our horses too warm, as a rule, for the sake of giving them smooth coats. Make it a rule never to give a horse feed or water until he has stood an hour after coming in off the road or from hard work. Rub him down as soon as he comes in, throw a warm blanket over him, and remove it when he is fed or within an hour. Never leave a warm horse to cool off in drafts of air or in the wind out-of-doors. A horse stable should be light, airy, and roomy. A horse that does nothing will do well on hay alone, watered twice a day, and groomed twice a week. If he is used, groom daily. Keep the stable always clean.

Beef Cattle.—This season is the best in the year, perhaps, for putting flesh upon beasts. They must be fed at each meal all that they will eat with a relish and digest thoroughly, so as to be hungry when the time comes for feeding again. All success, we may say, depends upon appetite, and this upon health. It is promoted by an occasional change of diet, by the use of the card and curry-comb, but above all by punctuality in giving stalled cattle their feed. Litter well and save every drop and particle of manure value. These are the feeder's principal profits. Keep the stables warm but the air pure. Quiet and darkness are important.

Cows.—Keep them quiet. Feed corn stalks cut fine, soaked 12 hours, with meal upon them. If possible, keep water before cows all the time. See article on butter making. It will pay those having good, warm milk-rooms to make butter all winter. We are in the habit of drying our cows off very much too early. To make butter, however, will require liberal feeding with corn meal, rye bran, cannelle, or something of the kind.

Orchard and Nursery.

Fruit is much accelerated or retarded in ripening by the temperature. That which keep best which is subjected to few alterations of temperature, and has been as cool as may be without actually freezing.

Ripening is an interesting process; it is the first step towards decay. Changes go on in the fruit after it is picked, quite as important as those which occur at any other time. Not only do the access of air and the temperature affect the fruit, but the fruit in ripening affects both air and temperature. Oxygen is absorbed, carbonic acid given off, and heat produced. Open the fruit cellar or room whenever the outside temperature will allow, provided it is not warmer within than without.

Planting may often be done this month, but on no account set trees in wet or partly frozen soil. It will be much better to heel-in the trees in a dry, sandy spot, unless the soil is in a condition perfectly well suited to receive them.

Cider is still to be made. See page 359, last month.

Vinegar.—Convert all inferior fruit into vinegar; it will pay better than to turn it into pork. See article on vinegar making, last month, page 367.

Stocks for root-grafting are to be taken up, assort-

ed, and tied in bundles of convenient size, and either buried where they can be got at when needed, or, what is better, packed in boxes of sawdust of its natural dampness, and placed in a cool cellar.

Cions may be cut at any time when the wood is not frozen. Store them in sawdust and see that it does not dry out, and that the boxes are kept cool.

Seedlings will need protection, but this should not be applied too early. Nature uses leaves, and nothing better has yet been proposed. In the absence of these, use boughs of cedar or other evergreen.

Fruit Garden.

See last month's notes, as well as those given above under orchard.

Pears of the choice kinds, that have been well kept, now bring a good price in market. It will pay to pack fine specimens of *Beurre d'Anjou*, *Duchesse d'Angoulême*, and such high-priced kinds, in cheap boxes holding a single layer of fruit, and wrap each pear in some very soft white paper. A good pear is such a royal thing that it cannot be treated with too much attention.

Covering of all plants, whether of raspberries and grape-vines with earth, or strawberries with straw or other material, should not be done too soon nor delayed too late. Try to catch just that time when winter sets in, and the ground is about to freeze.

Root Cuttings of blackberries, raspberries, and all plants propagated in this way, are to be made. The whole story is: cut the roots in pieces two to three inches in length, and pack them with earth in a box. If the box be at all tight, make holes to allow any moisture to drain off, and bury it in a place deep enough to be safe from frost, and where no water will accumulate. If the spot be not naturally dry, put in a drain of some kind.

Cuttings of currants, gooseberries, and quinces, may be planted. We have often given directions for the best treatment of cuttings of this kind. One condition of success is that the soil be closely pressed against the lower ends of the cuttings.

Grape-vines.—It is better to prune these now, but they may be left until very early spring. We are often asked "How shall I prune my grape-vine?" The question is as difficult to answer as it would be for a doctor to prescribe merely upon the information, "My wife is sick, what shall I do for her?" Each vine must be treated according to its individual needs, no matter what "system" of pruning is adopted. In view of these frequent queries, we have written a series of articles, extending nearly through the whole year, the main object of which has been to show the reader, in the first place, how the vine grows, and secondly, to set forth that all systems of pruning depended upon this knowledge. An intelligent person upon looking over the articles mentioned cannot go far wrong, and we refer to those for general principles. How to prune,—the merely mechanical art,—will depend upon how much is to be done. Where there are many vines, one of the very clever pruning shears, now sold by dealers in implements, will be found best, but a good knife will do. It is safer to leave one more bud than is needed on each cane; i. e., if two shoots are wanted in a place, leave three buds. When the severity of winter is over, say in February, go over the vines and remove the extra bud. In all pruning do not cut too close to a bud, but leave about an inch of cane above the last one.

Grape Cuttings.—The wood resulting from pruning may be used for propagation. It should be kept cool and from drying. There is a great difference in varieties as to the ease with which they may be propagated. The management of difficult sorts was described in November, 1867, page 469.

Kitchen Garden.

Follow the suggestions given last month, concerning the preparation of the soil. Have every foot spaded or plowed that can be done. Sod land, intended to be used for garden crops next year, should be heavily manured and plowed. Put down drains, if needed, and the weather serves.

Asparagus Beds are to be covered with coarse manure, or with straw or other litter.

Roots placed in pits as directed last month are to be covered with earth only when the weather renders protection necessary. The hardier roots, such as parsnips and horseradish, may be dug as long as the ground is not too much frozen.

Manure.—Success in gardening depends in the main upon not only generous, but heavy manuring. For an excellent method of increasing the stock, see the notes on farm work and various articles scattered through our pages. There is an important item, night soil, usually neglected. For the method of converting this into valuable poultice for the garden, see article on page 416.

Rhubarb is better transplanted now than in spring. It may be done as long as the ground remains open. This plant needs an abundance of manure.

Cold Frames.—Cabbages and other plants wintered in these are often killed by too much heat than by the cold. They will endure a moderate freezing without injury. The sashes should be put over the frames at night only, unless the weather becomes colder than usual this month.

Celery may be stored in trenches—or left still later if it can be banked up with earth. The storing for winter is done in trenches a foot wide, and as deep as necessary to admit the plants. Set the roots close together, without any packing of earth, and when cold weather comes on, cover with straw.

Cabbages.—The best method yet devised for preserving these is to invert the heads and cover them with four to six inches of earth. This should be postponed as late as the earth can be worked.

Spinach will, in most places, need a slight covering, applied only when the ground begins to freeze.

Soil should be prepared for use in hot-beds next spring. It is often difficult to get it at the time it is needed, and it facilitates matters much to have a good heap in readiness. A light, rich loam is required, and if the garden soil is heavy, use a portion of sand. Let well-rotted manure form one-third the bulk. Incorporate the whole thoroughly, and place in a heap and cover with boards or soils.

Flower Garden and Lawn.

In this department there is little to add to our notes of last month, and many directions given then will prove quite timely now. In this, as in all other gardening, endeavor to do now everything that will save work next spring.

Planting of many things may yet be done, the rules governing the planting of deciduous ornamental trees and shrubs being much the same as already indicated under fruit trees and shrubs.

Bulbs should have been planted last month, but they may be put in now with good results. Bulbs of *Gladiolus*, etc., are to be taken up. *Japan Lilies* are quite hardy. Cover all bulb beds, new and old, with a good coat of coarse manure, applied when the ground begins to freeze.

Chrysanthemums will need stakes. Put those in pots, after their bloom is over, in a cool cellar.

Dahlia.—If these are still in the ground, take them up and store as directed last month.

Protect half hardy things as the weather gets cold, by the use of litter and evergreen boughs.

Green and Hot-Houses.

Sudden changes are to be guarded against, and as the sun still does a good part of the heating, fire will only be needed occasionally.

Insects.—Watch for and attack on their appearance.

Bulbs.—Bring a portion of the pots into a warm place, if they have made a good supply of roots.

Cannellias will need a frequent use of the syringe to keep the foliage healthy. Keep them cool.

Propagate, for winter blooming, a stock of rapidly growing things, if there are vacancies to fill.

Climbers are most useful in the green-house, and amongst these the *Tropaeolums* are very valuable.

Annals may be sown, though the bloom will be late. *Mignonette*, *Sweet Alyssum*, and *Candytuft*, are always in request for bouquets in winter.

AMERICAN AGRICULTURIST.

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The election excitement being now about over, we can all turn our attention to regular duties and business. The Publishers of this paper are at theirs. First, they are laying large plans for furnishing the best possible paper during 1869—one that shall be valuable to everybody—valuable for its great amount of useful, reliable information on everything that pertains to indoor and out-door practical life—to the young as well as to the old. They will provide beautiful and instructive Engravings, without limit as to number

and cost. In short, they will—guided by long experience, and with unlimited resources—aim to supply the best paper possible to be made.—Second, they will seek to place this journal within the reach of everybody. The price will be kept down to the lowest possible limits—depending, as heretofore, upon increased circulation to meet increased expenses.—Third, they will try to have everybody take and read the paper who will be benefited by it,—and who will not? But this is a great country, and though almost everybody knows of the paper, not one in ten knows its value, and how cheap it is. The Publishers, therefore, solicit the kind words and deeds of the present readers in making the paper known in every household. As an incentive, or reward, or recognition for aid of this kind, the Publishers offer a great variety of valuable presents or Premiums to all those who will give a little time (but very little is required) to increasing the circulation of the paper.

Please look over the table of Premium Articles, and the description of them published last month (another copy will be sent when desired,) select whatever is most wanted, and you can get it. We know these articles are all good, and take great pleasure in sending them out, aside from any pecuniary advantage derived. Thousands of letters of thanks have been received from those who have hitherto secured our various premiums.

Our list was very comprehensive last month, but we are now able to add some fine Devons (premiums 101 to 105—see descriptions) so that the list for 1869 is quite complete. We are ready to begin sending these premiums out at once—indeed, many have already obtained them. A Western Lady has secured a \$650 Piano since Sept. 1st for premium subscribers. All subscribers for 1869 can begin now, without additional expense. See page 394. Will you take one of these premiums, this year, Reader? Suppose you try and secure it during November.

EXPLANATION.—Our immense circulation enables us to do things on an extensive scale, and doing this, adds again to our circulation. We spend large sums for engravings, for collecting information, etc., and it costs no more for all these to supply half a million subscribers than it would half a thousand. There is but one office, one set of editors, engravers, etc., to be supported, and we can thus furnish a superior paper at an exceedingly low price.... We expend all the subscription money, and tens of thousands of dollars more, in simply getting up and furnishing the paper itself, and yet make a satisfactory profit, besides paying all the premiums. Our unprecedented circulation makes every line very valuable to advertisers, who gladly pay a large price to reach so many people—especially as they know we shut out humbugs and unreliable parties from our advertising columns. So our advertisements furnish money to pay premiums; the premiums get more subscribers; more subscribers add to the value of the advertisements, and thus we get more money for more premiums. The whole thing is simple, and only requires courage and enterprise to carry it out. Everybody gets a very good and very cheap paper; and thousands of people get good premium articles—just such as they want—simply by making up clubs of subscribers. Your opportunity to do this, Reader, is just as good as that of any other person in the world. What premium will you have? Further on we tell how to get it.

It Pays DOUBLY to try for our Premiums. A few odd hours' work, with a copy of the paper to show, will collect enough subscribers to secure one of the fine articles in our list. As a *business*, some Gentlemen, several boys, and many Ladies, canvassed for subscribers, received various premiums, sold them for cash, and made high wages. One Lady thus made \$1,200 in less than 6 months the past year. Others made \$150 to \$250 each, in single months.—Again, Everybody that circulates the *Agriculturist*, and thus gets more people to reading and thinking, is doing a good work for the country. Twenty-five copies circulating in a neighborhood will stimulate thought and enterprise that will soon increase the value of all the property in the place.

Presents.—Many persons make up clubs and secure our premium articles, as sewing machines, silver sets, etc., for presents to a wife or friend. Many neighborhoods make up clubs for sewing machines to be given to poor widows, or to a Pastor's wife. Scholars unite and get a Watch for a teacher, a Melodeon for their school room, and so on.

Read and carefully note the following: (a) Get subscribers anywhere; all sent by one person count together, though from one or a dozen different Post-Offices. But.... (b) Say with each name or list of names sent, that it is for a premium list, and we will so record it.... (c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. Any time, from one to six months, will be allowed, to fill up your list as large as you may desire. The premium will be paid *whenever* you call for it.... (d) Send the exact money with each list of names, so that there may be no confusion of money accounts.... (e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer premiums to canvassers. N. B.—The extra copy to clubs of ten or twenty is not given where premium articles are called for.... (f) Specimen Numbers, Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, for every extra copy of the paper costs, with the 2c. prepaid postage, about 12 cents.... (g) Remit money in Checks on New York Banks or Bankers payable to order of Orange Judd & Co., or send Post-Office Money Orders. If neither of these is obtainable, Register

Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

(In this table are given the regular cash prices of each article, and the number of subscribers required at \$1.50 a year, to get it free, also at the lowest club rate of \$1 a year. For full descriptions of the articles see extra sheets sent free.)

**Table of Premiums and Terms,
For Volume 28—(1869).
Open to All—No Competition.**

No.	Names of Premium Articles.	Price of Premiums.	Number of Subscribers required at \$1.50 a year.
1	Short-horn Bull, "Glasman,"	\$200 00	425 1250
2	Short-horn Bull, "Malcolm,"	\$200 00	425 1250
3	Agroshire Bull, "Werner,"	\$250 00	250 750
4	Agroshire Bull, "Duke of Hartford,"	\$250 00	250 750
5	Agroshire Bull, "McKeon,"	\$300 00	250 650
6	Agroshire Bull, "Malvern,"	\$300 00	250 650
7	Agroshire Bull, "Dugal Grant,"	\$350 00	150 550
8	Agroshire Bull, "Johnny Crockett,"	\$350 00	150 550
9	Agroshire Bull, "John Brown,"	\$350 00	150 550
10	Agroshire Bull, "John Brown,"	\$350 00	150 550
11	Agroshire Bull, "Calif.,"	\$300 00	95 325
12	Agroshire Bull, "Wachusett,"	\$300 00	95 325
13	Agroshire Bull, "Devonshire,"	\$300 00	95 325
14	Agroshire Bull, "Oostepie,"	\$300 00	250 650
15	Agroshire Bull, "Alleghany,"	\$300 00	250 650
16	Agroshire Bull, "Alleghany,"	\$300 00	250 650
17	Catskill Ram,	\$200 00	250 650
18	Catskill Ram,	\$200 00	250 650
19	Catskill Ram,	\$200 00	250 650
20	Catskill Ram,	\$200 00	250 650
21	Catskill Ram,	\$200 00	250 650
22	Catskill Ram,	\$200 00	250 650
23	Catskill Ram,	\$200 00	250 650
24	Catskill Ram,	\$200 00	250 650
25	Catskill Ram,	\$200 00	250 650
26	Catskill Ram,	\$200 00	250 650
27	Catskill Ram,	\$200 00	250 650
28	Catskill Ram,	\$200 00	250 650
29	Catskill Ram,	\$200 00	250 650
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31	Catskill Ram,	\$200 00	250 650
32	Catskill Ram,	\$200 00	250 650
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38	Catskill Ram,	\$200 00	250 650
39	Catskill Ram,	\$200 00	250 650
40	Catskill Ram,	\$200 00	250 650
41	Catskill Ram,	\$200 00	250 650
42	Catskill Ram,	\$200 00	250 650
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77	Catskill Ram,	\$200 00	250 650
78	Catskill Ram,	\$200 00	250 650
79	Catskill Ram,	\$200 00	250 650
80	Catskill Ram,	\$200 00	250 650
81	Catskill Ram,	\$200 00	250 650
82	Catskill Ram,	\$200 00	250 650
83	Catskill Ram,	\$200 00	250 650
84	Catskill Ram,	\$200 00	250 650
85	Catskill Ram,	\$200 00	250 650
86	Catskill Ram,	\$200 00	250 650
87	Catskill Ram,	\$200 00	250 650
88	Catskill Ram,	\$200 00	250 650
89	Catskill Ram,	\$200 00	250 650
90	Catskill Ram,	\$200 00	250 650
91	Catskill Ram,	\$200 00	250 650
92	Catskill Ram,	\$200 00	250 650
93	Catskill Ram,	\$200 00	250 650
94	Catskill Ram,	\$200 00	250 650
95	Catskill Ram,	\$200 00	250 650
96	Catskill Ram,	\$200 00	250 650
97	Catskill Ram,	\$200 00	250 650
98	Catskill Ram,	\$200 00	250 650
99	Catskill Ram,	\$200 00	250 650
100	Catskill Ram,	\$200 00	250 650

Description of the Premiums.
A FULL DESCRIPTION of all the premiums is given on an extra sheet, a copy of which will be sent free to every one desiring it. We have only room here for the following:

No. 29.—Early Rose Potatoes.—This remarkable variety has awakened so much interest throughout the country that there is a general desire to get a few as a start for seed. A few hundred people only have been able to get them. We have, therefore, arranged with Messrs. B. K. Bliss & Son to supply us with a quantity of the genuine article, put up in 3 lb parcels, to go by mail, post-paid, to any part of the country. They should go out before freezing weather, but when too late for this, we will keep them until warm enough to mail them in Spring. This premium can only remain open so long as the supply lasts. For some account of the Early Rose, see page 356 of *Agriculturist* for last month (October), and Messrs. Bliss & Son's advertisement in our paper. We send 3 lbs. to the care of our furnishing a club of four at \$1.50 each. For fourteen subscribers at \$1.50 each, we will send four 3 lb. packages.

No. 72.—Crandall's Improved Building Blocks furnish a most attractive amusement for children. They are very simple in construction, will stand years of children's handling without breaking, and give renewed pleasure daily. Churches, Dwellings, Barns, Mills, Fences, Furniture, etc., in almost endless variety, can be built with them, and the structures remain so firm as to be carried about. For developing the ingenuity and taste of children they are unequalled. The Blocks are put up in boxes, each with each box is a set of simple designs for buildings. The Front Piece and sides are plain. The same blocks may be had, maple finished, by sending 3 more subscribers, at \$1.50 each, or 10 more at \$1 each. Send for a descriptive show-bill.

Nos. 76 to 81—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information on these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-seventh Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 sent by mail, which they must be post-paid. They are put up in clean numbers, with the Index to each volume.—They are profusely illustrated, the Engravings used in them having alone cost about \$30,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from XVI to XXVII, inclusive. For ordinary use, the sets of numbers unbound will answer quite well.—Many hundreds of these volumes are taken every year as premiums.

Nos. 82 to 87—Bound Volumes of Agriculturist.—These are the same as Nos. 76 to 81 above, but are neatly bound in uniform style, and cost extra for binding and postage. Sent post-paid.

Nos. 88 to 99—GOOD LIBRARIES.

—In these premiums, we offer a choice of **Books for the Farm, Garden, and Household.** The person entitled to any one of the premiums 88 to 99 may select any books desired from the next column, to the amount of the premiums, and the books will be forwarded, *paid through* to the nearest Post-Office, or Express office, as we may find it most convenient to send them. \$25 or \$50 worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to *make their hands help their heads*. Any good book will, in the end, be of far more value to a youth than to have an extra acre of land, on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres, than he would off from 50 acres without the mental ability which reading will give him.—Our premiums will enable many a family to secure a larger or smaller Library. Let the Farmers of a neighborhood unite their efforts and get an agricultural Library for general use.

No. 100—General Book Premium.

Any one not desiring the specific Book premiums, 88 to 99, on sending any number of names above 25, may select Books from the next column, to the amount of 10 cents for each subscriber sent at \$1: or to the amount of 30 cents for each name sent at the (ten) club price of \$1.30 each: or to the amount of 60 cents for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

101-105.—DEVON BULLS.

—Owing to the absence from home of the owner, we were unable to announce the very desirable premiums last month. The **Devons** are remarkably healthy cattle, of a dark red or bright mahogany color; they are very hardy and active—able to pick up a living easily. The cows give a medium quality of rich milk, and hold out long. The oxen are the best light-draft cattle in the world—ambitious, yet docile, quick, intelligent, and tough. Devon

beef is of superior quality, and always quoted high in our beef markets. Devons come slower to maturity than most other breeds, but remain much longer of full vigor and value.—Grade Devons out of large common cows make either large red oxen of great docility, quickness, and strength, or almost uniformly fine, good-sized cows and excellent milkers.... We have selected the following animals from the celebrated herd of the Hon. EPHRAIM H. HYDE, of Stafford, Conn., viz.: one 3-year and two 1-year old bulls, and two bull calves, all of Mr. Hyde's own breeding. This herd has taken the most important prizes for the past two years, at least, of the New England Agricultural Society, and has, we are confident, no superior in America. Wherever these animals go, they will improve the stock of the region.

No. 101.—Devon Bull "Gen. Lyon."

—Calved June 25th, 1867. *Sire*, Devon, out of Devon, (1925.) *Dam*, Fairy 9, (101) by Comet 22, (162.) *Grand Dam*, Fairy 4, (99). *Great Grand Dam*, imported Fairy, bred by C. Turner. Price \$250.

No. 102.—Devon Bull "Jack."

—(256.) Calved May, 1865. *Sire*, Nero (79.) *Dam*, Lizzie, (312) by Kosuth (53.) *Grand Dam*, Jane, (161) by imported Albert (2), etc. Jack was awarded the 1st prize as a 2-year old by the N. E. Agricultural Society at Providence last year. Price \$150.

No. 103.—Devon Bull "Bloodgood."

—(168)—Calved June 25th, 1867. *Sire*, Devon, (196) out of Devon (1255 E.) *Dam*, Venus (341) by Kosuth, (53.) *Grand Dam*, Lady Dodge, (192.) *Great Grand Dam*, Lady Jane, (195) by imported Bloomfield, (372.) *Sire*, \$125.

No. 104.—Devon Bull Calf, "Po-casset."

—Calved August 28th, 1868. *Sire*, Lion, (365.) *Dam*, Fairy 9, (101.) Price, \$75.

No. 105.—Devon Bull Calf, "Co-hasset."

—Calved August 25th, 1868. *Sire*, Lion, (365.) *Dam*, Winona. Price, \$50.

BOOKS FOR FARMERS AND OTHERS.

[For sale at the Office of the *Agriculturist*, or they will be forwarded by mail, post-paid, on receipt of price, &c. All these are included in our Premiums, Nos. 88 to 100 above.]

Allen's (L. F.) Rural Architecture	150
Allen's (L. F.) American Farm Book	150
Allen's Diseases of Domestic Animals	150
Am. Agricultural Annual, 1867 & 1868, each, pa. 50c.	75
Am. Agricultural Annual, 1867 & 1868, each, pa. 50c.	75
American Bird Fancier	100
American Poultry—Applies—By Dr. John A. Warner	300
American Weeds and Useful Plants	100
Architecture, by Cummings & Miller	100
Architects, Modern Artists, by Cummings & Miller	100
Bennet's Rabbit Fancier	100
Bonner's Method of Making Manure	25
Boyd's (C. F.) Evergreens of the United States	100
Boschnagall's Rural Economy	100
Breck's New Book of Flowers	125
Bull's Flower Garden and Kitchen Gardener	100
Bull's Family Kitchen Gardener	100
Chorlton's Grape Grower's Guide	25
Cobbett's American Gardener	25
Cobbett's (S. W.) American Farm Book	25
Cobbett's (S. W.) American Farm Book	25
Copeland's Country Life	50
Cotton Culture, (Lyman)	50
Cotton Culture, (Lyman)	50
Dadd's (Geo. H.) Modern Horse Doctor	150
Dadd's American Cattle Doctor	150
Darwin's Duck Manual	150
Darwin's Animals & Plants under Domestication 2 vols.	600
Dog and Gun (Hooper's).....paper, 20c. cloth, 60c.	60
Dowling's Landscape Gardening (new Edition)	150
Draughting for Profit and Health by G. E. Waring, Jr.	150
Eastwood on Cranberry	150
Elliot's Western Fruit Grower's Handbook	150
Flax Culture	150
Flax Culture, (Thomson)	150
French's Farm Drainage	150
Fryer's Grape Cultivator, (Revised Edition)	150
Fryer's Strawberry Cultivator	150
Fryer's Small Fruit Cultivator	150
Gardening for Profit, by Peter Henderson	150
Geology on Squashes	150
Gleaner on Milk Cows	75
Herbert's Insects Injurious to Vegetation, etc., c'd; pls.	600
Hill's Rural Annual, (Hill's) 8 vols., in 4 vols.	150
Hobbs's Hints to Horsekeepers	150
Hon. Culture	150
How Crops Grow, by Prof. S. W. Johnson	150
Johnson's Agricultural Chemistry	150
Johnson's Elements of Agricultural Chemistry	150
Leach's How to Build Hot-Houses	150
Miles on the Horse's Foot	75
Miles on the Grape Vine	75
My Vineyard at Lakeview	125
Norton's Scientific Agriculture	150
Olden Culture	150
Our Farm of Four Acres (bound) 60c. paper, 75c.	30
Pest and Its Uses, by Prof. S. W. Johnson	150
Pender's Land Measurer	150
Percheron Horse	150
Quincy's Mysteries of Bee Keeping (new)	150
Rivall's Sheep Husbandry	150
Rivall's Fine Wool Sheep Husbandry	150
Rivers' Miscellaneous Fruit Garden	150
Richardson on the Dog, paper 50c. cloth, 60c.	60
Schenck's Domestic Poultry (new)	150
Schenck's Gardener's Text Book	75
Skiff's Horsewife	150
Smith's (John) Stable	150
Thompson's Food of Animals	150
The Banker's Papers	150
Thoburn Culture	150
Warner's Hedges and Evergreens	150
Yonatt and Spooner on the Horse	150
Yonatt and Martin on Cattle	150
Yonatt on the Hog	150
Yonatt on Sheep	150

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-two Premiums, Nos. 29, 30, 31, 61, 62, 63, 64, and 76 to 100 inclusive, will each be delivered FREE of all charges, by mail or express, (at the Post-Office or express office nearest recipient), to any place in the United States or Territories, excepting those reached only by the Overland Mail.—The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance that may be specified.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, show at a glance the transactions for the month ending Oct. 14, 1898, and for the corresponding month last year:

TRANSACTIONS AT THE NEW-YORK MARKETS.									
1. Receipts. Flour, Wheat, Corn, Rye, Barley, Oats.									
26 days 1898.....	378,000	1,735,000	2,350,000	61,000	316,000	2,217,000	27 days last yr.....	297,500	431,000
26 days 1897.....	437,000	2,346,000	1,530,000	380,000	885,000	1,510,000			
2. Sales. Flour, Wheat, Corn, Rye, Barley, Oats.									
26 days 1898.....	277,000	2,119,000	2,938,000	132,000	217,000	1,761,000	27 days last yr.....	281,500	1,142,000
26 days 1897.....	441,000	1,892,000	2,000,000	320,000	2,150	1,286,000			
3. Exports from New York, Jan. 1 to Oct. 14:									
Flour, Wheat, Corn, Rye, Barley, Oats.									
1898.....	73,927	3,998,124	5,541,609	158,083	—	43,826	1897.....	89,093	994,531
1897.....	79,947	3,632,103	219,732	886,467	—	106,717	1896.....	114,461	311,139
1896.....	114,461	311,139	10,325,614	192,489	—	198,475			
4. Stock of grain in store at New York:									
Wheat, Corn, Rye, Barley, Oats, Malt.									
Oct. 12.....	488,005	2,608,741	31,723	2,026	1,208,003	20,631	Sept. 9.....	265,549	2,143,508
Aug. 11.....	516,250	2,418,460	—	555	1,990,100	92,903	July 18.....	520,582	2,382,992
July 18.....	520,582	2,382,992	—	28,892	1,910,000	92,903	June 10.....	1,520,797	1,230,171
May 10.....	329,812	1,230,171	—	31,241	1,494,000	81,265	Apr. 15.....	610,129	1,288,520
Mar. 10.....	1,175,172	1,719,241	—	43,142	46,614	1,791,241	Feb. 11.....	1,507,629	1,703,380
Jan. 11.....	1,507,629	1,703,380	—	187,111	83,083	2,154,191	Jan. 12.....	1,604,415	1,451,353
1897.....	1,604,415	1,451,353	309,920	32,815	81,955	53,445	Nov. 12.....	941,129	1,944,730
Nov. 12.....	941,129	1,944,730	—	134,513	361,553	2,496,732	Oct. 12.....	10,618	87,601
Oct. 12.....	10,618	87,601	—	300	35,733	8,995,997			
5. Receipts at tide water at Albany to Oct. 7th:									
Flour, Wheat, Corn, Rye, Barley, Oats.									
1898.....	212,850	7,438,500	11,214,700	330,500	1,014,900	7,955,800	1897.....	160,300	2,261,800
1897.....	160,300	2,261,800	11,507,000	300,600	455,400	4,089,500	1896.....	133,100	2,418,100
1896.....	133,100	2,418,100	21,117,900	715,000	567,300	6,835,900			

CURRENT WHOLESALE PRICES.

Sept. 14.									
1898.									
Flour—Super to Extra State	\$6 75	43 85	60 55	60 55	60 55	60 55	60 55	60 55	60 55
Super to Extra Southern	8 75	62 10	25 75	62 10	25 75	62 10	25 75	62 10	25 75
Extra Western	9 00	62 10	25 75	62 10	25 75	62 10	25 75	62 10	25 75
Extra Genesee	9 00	62 10	25 75	62 10	25 75	62 10	25 75	62 10	25 75
Superfine Western	6 75	62 10	25 75	62 10	25 75	62 10	25 75	62 10	25 75
RYE FLOUR	5 25	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55
CORN MEAL	5 00	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55
WHEAT—All kinds of White	2 25	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55
All kinds of Red and Amber	2 25	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55
CORN—Yellow	1 25	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55
Mixed	1 15	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55
OATS—Western	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55
State	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55
RYE	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55
BARLEY	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55	60 55
HAY—Bale \$100 B.	65 00	135 00	65 00	135 00	65 00	135 00	65 00	135 00	65 00
LOOSE	70 00	85 00	70 00	85 00	70 00	85 00	70 00	85 00	70 00
STRAW—\$100 B.	25 00	35 00	25 00	35 00	25 00	35 00	25 00	35 00	25 00
COTTON—Middling, \$100 B.	25 00	35 00	25 00	35 00	25 00	35 00	25 00	35 00	25 00
LORE—Crop of 100 B.	10 00	15 00	10 00	15 00	10 00	15 00	10 00	15 00	10 00
FEATHERS—Live Geese, \$100 B.	25 00	35 00	25 00	35 00	25 00	35 00	25 00	35 00	25 00
SEED—Clover, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
TRUITY, \$100 B.	20 00	30 00	20 00	30 00	20 00	30 00	20 00	30 00	20 00
FLAX, \$100 B.	20 00	30 00	20 00	30 00	20 00	30 00	20 00	30 00	20 00
WHEAT—Brown, \$100 B.	10 00	15 00	10 00	15 00	10 00	15 00	10 00	15 00	10 00
MOLASSES, Cuba, \$100 B.	8 00	12 00	8 00	12 00	8 00	12 00	8 00	12 00	8 00
COFFEE—Rio, (Gold, in bond)	10 00	15 00	10 00	15 00	10 00	15 00	10 00	15 00	10 00
TORONCO, Kentucky, \$100 B.	10 00	15 00	10 00	15 00	10 00	15 00	10 00	15 00	10 00
Seed, Land, \$100 B.	35 00	50 00	35 00	50 00	35 00	50 00	35 00	50 00	35 00
WOOL—Domestic, \$100 B.	35 00	50 00	35 00	50 00	35 00	50 00	35 00	50 00	35 00
Domestic, \$100 B.	35 00	50 00	35 00	50 00	35 00	50 00	35 00	50 00	35 00
California, unwashed	25 00	35 00	25 00	35 00	25 00	35 00	25 00	35 00	25 00
TALLOW	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
LARD—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
PORK—Mess, \$100 B.	30 00	40 00	30 00	40 00	30 00	40 00	30 00	40 00	30 00
PHRIC, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
BUTTER—Plain milk, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
LARD, in tins & barrels, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
BUTTER—Western, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
State, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
CHICKEN	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
BEANS—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
PEAS—Canada, in bond, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
POULTRY—Fresh, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
POULTRY—Fowl, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
TRUCKS, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
POTATOES, new—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
APPLES—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
SWEET POTATOES, \$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
CANDY—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
CABBAGES—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
ONIONS—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
BETTS—\$100 bunches.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
CUCUMBERS—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
BROOK CORN—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
TOMATOES—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
SQUASHES—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
PEACHES—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
PEARS—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
WATERMELONS—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
NUTS—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
GAGES—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
GRAPE—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00
QUINCES—\$100 B.	15 00	25 00	15 00	25 00	15 00	25 00	15 00	25 00	15 00

Gold has declined materially since our last, partly in consequence of the increased offerings, chiefly on Government account. The latest quotations are 136½/137½. There has been increased activity in the Breadstiff, but prices have been generally quoted much lower. The export demand has been running mainly on Flour and Wheat. The home trade inquiry has been good for

most articles, and there has been an unusually brisk speculative movement in Corn and Oats, as also to some extent in Rye and Barley. Flour, Wheat, Rye, and Corn, closed decidedly in favor of buyers, as regards prices. Barley and Oats leave off with an upward tendency. Provisions have been in more active request, but at unsettled prices. Pork, Butter, and Cheese, closed with considerable firmness. Bacon, Lard, and Beef, were quoted cheaper.... Cotton has been fairly active, closing steadily at our quotations. The receipts at the ports, thus far this season, since Sept. 1, are some 115,000 bales. The crop of 1897-8 reached 2,430,895 bales, of which 1,657,015 bales were exported. The crop of the preceding Cotton year was 1,951,988, of which there were 1,555,787 bales shipped to foreign ports. Wool has been less active, but quoted higher, closing buoyantly, on a reduced supply of desirable grades of wool. Tobacco, Hay, and Seeds, have been in less demand, and rather scarce in price.... Hops have been more active and quoted firmer.

New York Live Stock Markets.

WEEK ENDING. Bees, Cows, Calves, Sheep, Swine, etc.					
Sept. 21st.....	7,312	1,748	57,617	17,837	61,580
do. 22nd.....	7,312	1,748	57,617	17,837	61,580
do. 23rd.....	7,312	1,748	57,617	17,837	61,580
do. 24th.....	7,312	1,748	57,617	17,837	61,580
do. 25th.....	7,312	1,748	57,617	17,837	61,580
do. 26th.....	7,312	1,748	57,617	17,837	61,580
do. 27th.....	7,312	1,748	57,617	17,837	61,580
do. 28th.....	7,312	1,748	57,617	17,837	61,580
do. 29th.....	7,312	1,748	57,617	17,837	61,580
do. 30th.....	7,312	1,748	57,617	17,837	61,580
Total in four Weeks.....	27,320	6,952	200,164	61,517	237,870
do. for previous Weeks.....	8,762	830	9,332	18,227	21,819
Total.....	36,082	7,782	209,496	79,744	259,689
Bees, Cows, Calves, Sheep, Swine, etc.					
Average per Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 1st Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 2d Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 3d Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 4th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 5th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 6th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 7th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 8th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 9th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 10th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 11th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 12th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 13th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 14th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 15th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 16th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 17th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 18th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 19th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 20th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 21st Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 22nd Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 23rd Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 24th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 25th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 26th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 27th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 28th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 29th Week.....	6,981	1,416	1,756	40,138	39,980
do. do. 30th Week.....	6,981	1,416	1,756	40,138	39,980
Total in 1886.....	20,691	4,583	6,212	100,600	67,000
Total in 1885.....	20,691	4,583	6,212	100,600	67,000
Total in 1884.....	20,691	4,583	6,212	100,600	67,000
Total in 1883.....	20,691	4,583	6,212	100,600	67,000

is the same everywhere. What was done in 3,000 to 4,000 places last year, can be done in 25,000 places this year. The work will pay well, and do good besides. Every one read through the premium sheet.

The Department of Agriculture.

—There is every prospect that those who have been looking for a chance in the condition of affairs at the Department will not be disappointed. The Commissioner, Col. Horace Capron, evidently intends to make it both useful and creditable to the country. The offices have been removed from the crypt of the Patent Office building to a spacious new structure erected for their accommodation. Prof. Glover, who has already done so much under the most untoward circumstances, will here have ample room for his agricultural museum. The old propagating garden is to be given up, and Mr. Saunders will have abundant space in the grounds about the new building, not only for experimental work, but for a display of his taste in ornamental and landscape gardening. A number of acres have been laid out in the style of a park, which are to be planted as an arboretum which shall contain specimens of all trees hardy in the locality. These grounds are what under the name of an "Experimental Farm" were formerly so justly ridiculed. The chemist, Dr. Antisell, has a convenient and well-appointed laboratory. In the working force great changes have been made; a large number of hangers-on have been discharged, and these are of course opposed to the Department and its present administration. Every thing about the Department shows marks of energy and judgment, and we feel warranted in hoping that when the Commissioner and his assistants have become fairly settled in their new quarters, they will be able to do good work for the agriculture of the country.

Two Very Complete Country Residences

are now being finished by Mr. Judd, near his own Homestead, in Flushing. They have been erected partly as a source of amusement, and to exercise his own taste, and to show how many conveniences can be introduced into one's house with a moderate outlay; and partly to prepare houses inviting to good neighbors. They have all the conveniences of first-class city dwellings, and some not usually found there—especially country air and space, with churches and schools within walking distance; and though ten miles away, they are now quite as accessible to the business centre of New York by means of two railroads and ferries, as are most of the better dwelling houses on Manhattan Island. They will be shown with pleasure after Nov. 10th to any who may contemplate building and may wish to examine them. They will be sold on easy terms of payment. Price with lot, (125x140ft.) on a fine avenue, about \$14,000.

Sundry Humbugs.—Unsafe Oils.

For many years the *Agriculturist* has alone fought the legions of fraud and humbug. We, however, stood our ground, and when wisely gaining upon the enemy, aid came in the form of a law of Congress, late, to be sure, but welcome, in which sending forth gift concert circulars and all similar matters through the mails was made a penal offence. This law has been a severe check to operators in the gift line, and though they will probably find some way to get around the law, for the present they are on the retreat. These chaps will soon break out in a new place, but we shall try to follow them up, whatever colors they may fly. The gift-enterprise business is so far defeated that for a whole month we have seen no new phase of it. It is probably only a lull in the fight, but "for this relief much thanks." And Congress has our gratitude, as it should have that of the whole community of our readers, for the help it has afforded us and them. Villany assumes many shapes, of which the gift-enterprise is only one....Are the "One dollar" concerns, now becoming so plenty in N. Y. City and elsewhere, the honest, straightforward thing? Our readers must judge for themselves, and we trust that they will not be over-sanguine in rushing after these people of large promises. Van Allen and his Eureka Oil need to be again mentioned. We call attention to this subject for a double purpose. First, to denounce most strongly the use of a mixture of camphor and benzine, because it is dangerous in the extreme. Both of the articles are volatile, and one forms a very explosive vapor. Why people will buy such stuff and burn it is beyond our comprehension, but they do so, and both life and property are sacrificed by their use. Secondly, we wish to bring to mind the law in the matter of dangerous oils. Congress has tried to protect the people in this respect by striking at the root of the evil. The law is found in Sec. 29 of Amendments to the Internal Revenue Laws, approved March 2d, 1867. (See March, 1868, p. 88.) This act provides severe penalties for mixing for sale, or for selling any oil or burning fluid that will not stand the "fire test," as it is called. So little seems to be known about this very important subject that we will explain. The "fire test" is simply

this. Place a vessel of water on the stove and heat it to the temperature of 110° F.; put in another vessel (say a tin basin) some of the oil to be tested, and place this dish so it will float on the water, and let the whole remain a few minutes until the oil has been brought up to the temperature of the water. Now thrust a lighted stick into the oil; if the flame on the stick is extinguished, the oil is safe from explosion. If it burn, however, it is a dangerous oil, and its sale is prohibited by the law. Any person may find plenty of bad oil in his own town, but the U. S. Courts are not within the reach of the majority of sufferers, as time and money are necessary to get a case before those tribunals. Evil-disposed people are aware of this fact, and offer their vile compounds for sale regardless of the law. Rhode Island is first in supplying a much needed adjunct to this national law. In a code of State laws, she provides for appointing Inspectors of Kerosene with full power to prosecute any violation of the State law passed March 12th, 1867, almost immediately after the passage of the act of Congress. We have it from good authority that in the city of Providence there has not been a single accident from the explosion of kerosene since these laws went into operation, and that not a gallon of burning oil of any sort can be found on sale that will not stand the "fire test." So much for what good legislation will do for the protection of life and property. We entrust the authorities of every State so to supplement this act of Congress by State laws, and a system of inspection so rigid, that explosive oils of every sort may be completely banished from use.

A Brazen Swindle.

—One of the most brazen swindles we ever heard of is the one perpetrated by the "Patent Butter Association," 234 Broadway. This party actually had an office at the number given on Broadway, a little obscure room on one of the upper floors. They advertised to sell a powder, with directions for using, which would make one pound of butter from one pint of milk. They did sell a powder, which looks and tastes like cooking soda mixed with salt. The directions require that a pound of butter to each pint of new milk used should be placed together in a churn with some of the powder and churned until the butter comes. The result is that the good butter comes out white and almost spoiled, and weighs no more than when it went in. A moment's thought will show any one how impossible the claim is; for a pint of milk weighs only a pound, and it consists of more than 75 per cent of water to begin with.

Horticulture at the N. Y. State Fair.

—An immense tent served as the Floral Hall, which was all too small for the crowds which were attracted to it. Mr. Jas. Vick, who superintended the department, deserves much credit for the substantial and proper arrangements for showing the fruits and flowers, as well as for a display of taste in such ornamentation as the tent allowed. The fruit occupied tables against the wall of the tent, and flowers were arranged upon an inner circle. The show of fruit was very fine, and, of course, Ellwanger & Barry were preeminent in this department. E. Ware Sylvester, of Lyons, N. Y., had some notably fine tables, though not as many as E. & B. The show of grapes was very good, and some exotic grapes of John Fisher, Batavia, N. Y., deserve special notice. The finest pears of any single variety were the specimens of Duchesse, from C. M. Bowen, Vineland, N. J. In flowers, Mr. Vick was resplendent; Frost & Co. had a valuable collection, and Mrs. Van Name, without whom a State Fair would not seem half complete, was present from Chambersburgh, Pa., with her favorites, which took several premiums. Vegetables, as usual at the New York Fair, had a poor place. They were in a dark building, among cooking stoves and other things, and had to take their chances. The show was interesting, but we cannot commend it as being particularly fine. The chief attraction was the 150 varieties of potatoes exhibited by Reissig & Hexamer, Newcastle, Westchester Co., N. Y. Whether it was the potatoes or Doctor Hexamer himself, we cannot say, but the two together always had a crowd about them. C. F. Crossman, seed-grower, of Rochester, had a noticeably fine collection of garden vegetables, including many things not often seen on exhibition.

The Orange Judd Wheat Prizes.

—Feeling that wheat had not hitherto received that attention at the N. Y. State Fair that its importance demanded, Mr. Judd placed at the disposal of the N. Y. State Agricultural Society, \$300, to be offered as special premiums for wheat. It was hoped that this offer would bring out a fine display of grain and allow the many farmers who would visit the fair to see what could be done in the way of wheat culture. Two of the editorial staff of the *Agriculturist* were at the Fair, and each, without the knowledge of the other and without consultation with him, wrote down the wheat affair as a failure. Mr. Judd paid \$300, and no one save the recipients is in the least

benefited. He will probably never enquire who engineered the matter, and we will simply state what was done, to show what might not have been done. The premiums were coupled with such conditions that only thirteen entries were made, and of these only three exhibitors complied with all of the requirements. The premiums were awarded to these three, while there was vastly better grain present, but the exhibitors of it failed to show the stalks as required by the conditions. The premiums were not awarded until the last day of the fair, and the general public could not know which were the prize samples. Had the premiums been awarded earlier, the arrangements were such as to prevent any one from seeing the grain. A large pen was raised off, at the further side of which the barrels were placed, and the grand crowd which poured by were treated to a view of a very nice looking lot of barrels, loaded and unloaded. There was no wheat to be seen at all. Mr. Dietz, the celebrated grower of seed wheat, made a most useful show in the railing that the Society allowed the Judd wheat to make. This is what was done, and our readers will agree with us that if this is the way in which special premiums are to be managed hereafter, there is not a very strong inducement held out to any one to offer them.

Olm Brothers.—of Springfield, Mass., have a very fine collection of plants. In July last we figured some rare Begonias from their collection, and specimens of green-house plants we have received from them since show that they have all the new and choice things as soon as any one. We congratulate the citizens of Springfield upon having a first class horticultural establishment in their beautiful city, and hope the Brothers Olm will meet with the success that their skill and enterprise merit.

The New Jersey State and Central Fairs.

—The agriculturists of New Jersey are unfortunately not being able thoroughly to co-operate in one organization. There are several county agricultural Societies which make very creditable shows every year, and promote, so far as they can, improvement in agriculture. The New Jersey State Society is such only in name, and while it has the most attractive location we perhaps ever saw, puts forth an excellent premium list, and its officers make judicious efforts to have it take a high rank, it makes really but little more than a good county show. The N. J. Central Society was established, we believe, during a period of suspended animation on the part of the State Society, and this too has fine grounds and buildings, a good mile track, etc., pleasantly situated near the State capital. The offer of premiums was liberal, but the exhibition just about what would have been a credit to a good populous county. The subject requires legislation, we should say, for a State of such varied and interesting agricultural products, and so situated that every part is easily communicated with, ought to have an agricultural Head Center, and this individual or organization, Board or Society, should enjoy the hearty co-operation of all the county and district Societies and of all the go-ahead farmers in the State.

Manhattan Co-operative Relief Association.

—We had no cause to impugn the good faith and good intentions of the parties advertising this Association, or it would not have been admitted to our columns. The many inquiries from our readers led us to study the scheme somewhat, and though it has various good features, we are not prepared to endorse it. The first objection that occurred was that the annual death rate was placed too low. If only "3000" died each year, it would take 166½ years for the 500,000 persons in any class to die off! There are sundry other objections which might be named had we space.

Norway Oats, claimed to weigh 40 to 46 pounds to the measured bushel, really weigh 32 pounds, as sent out by the agents. This is exactly a bushel by weight, as established by law in most of the States.

Sense at the Farmers' Club.—Once in a while there is a ripple on the sluggish stream of talk at the Farmers' Club, which gives a little variety to the reports. A committee was appointed to visit the Walter Grape on the vine, made up after the tadpole fashion with Horace Greeley for a head and dwindling down to a very small tail. Such a burlesque on grape committees was too much for Mr. Quinn, who asked: "Why is it that no man is appointed on that committee who has made grapes a study? We have plenty of such men, but I do not see their names mentioned here." Mr. Quinn should not ask impertinent questions. He evidently is not in the rig.

Early Corn, Late Planted.—Mr. H. C. Redfield of Metuchen, N. J., shows us a sample of his crop of yellow 8-rowed Canada corn, planted June 20th, ripe and fit to shell October 12th. This is quick work,

A Good Seed Bed on Sward Land.

—“F. W.,” Morristown, N. J. “How shall I harrow so as not to bring up the sods and make a rough surface?” A good seed bed upon sward land for winter grain is a matter of great importance, especially if the seed is put in with a drill. A good deal depends upon the plowing. With the Michigan plow, which entirely buries the sod and brings to the surface 4 or 5 inches of loose soil, there is no difficulty. The swivel plow, turning the furrows all one way, also makes a smooth seed bed, if the harrowing is skillfully done. The harrow should first be run lengthwise of the furrows, to press down and level the sods. Then harrow crosswise in the direction in which the furrows are laid, and go back in the same track. By this method no barled sods will be brought to the surface, and a good seed bed will be prepared.

When to Thrash and Sell Grain.

“L. D. B.,” Northampton, Pa. “What are the prospects for the grain market the coming winter?”—About all that can be said now is that we have abundant crops, and there are short crops in Western Europe. As a rule, a farmer does not to thrash and sell his grain early, if he can get satisfactory prices. Few farmers can afford to speculate in articles so liable to waste as grain. It is liable to be damaged by the weather while in stack and by rats and mice both in stack and in bin. If changed into cash it begins to draw or stop interest at once.

The Frost Improving Soil.

—“Is there any proof that the soil is benefited by frequent freezing and thawing?”—“B. F. M.,” Vincennes. This is easily tested by ridging a few square rods in the garden either with the plow or spade, thus exposing about twice the average surface to the action of the frost. If land thus treated is more productive than that which lies undisturbed, the frost makes the difference. We know it to be beneficial, and especially so to heavy loams and clay soils.

Alsike Clover.

—“N. T. S.,” Colchester, Vt. “Can you recommend Alsike clover as a forage plant?”—We have not sufficient acquaintance with the article to do this. It was introduced into the country by the Patent Office in 1863, but seems to have made very little progress, catching something of the spirit of the officials that introduced it. It is said to be best adapted to strong, moist soils, sows its own seeds, and will last a dozen years or more. If the seed, sold for a dollar a pound or upwards we should stand some chance of learning more about it.

Stone or Wood Fences.

—“G. D. C.,” Lyme, Ct. “I have occasion to build about 100 rods of fence this fall and winter, and have both stone and wood upon the farm. Which will pay best in the long run?” Stones, unquestionably, if they are in the soil and need to be removed from the surface. This has been the opinion of Eastern farmers from the first settlement of the country, and it is still better economy now that we need smooth fields for improved implements of tillage and harvesting. A well-made stone wall with the foundation put below frost will cost more than a rail fence, but it will last many times as long without repairs and when these are needed the material is still good for resetting. The wood fence needs attention every spring and after a few years is only fit for fire-wood. We have quite too many fences upon our farms, but if they must be built, use stone and make them permanent. This looks as if we meant to stay while we live and to leave our farms to our children free from the expense of fence-making.

Richness of Land.

—“How much land ought a farmer to own?”—“A. H. L.,” Spencer, Mass. “Ten acres is enough” for some people, and is more for them to manage than a thousand acres for others. A man may safely own just as much land as he can make pay six per cent and upwards on the capital invested in it and in its cultivation. Six per cent is the lowest legal rate of interest in any of the States, and probably it is a fair average of the profits of all kinds of business. Some men have skill enough to make their land pay ten per cent and upwards. But the great majority of our farms do not pay five per cent, and many of them not even three. We recently visited a district of cheap lands and poor farming, in one of the older States, which furnishes good examples of “maunders of land.” One farm of 22 acres of land rents for \$200, and the owner pays \$10 taxes on it, leaving only \$190 for the use of the farm. It is valued at \$7,000, and is probably worth that to any man who knows how to work it. But the owner gets only two per cent on his capital, or 56 cents an acre for the use of the land. The tenant keeps a dairy and sheep, pays his rent easy, and gets something more for his labor than he would to work by the month, but is not doing a very profitable business. The farm might easily be made to

clear a thousand dollars for its owner, for it is a good grain soil, and has admirable facilities for making manure. Another owns a farm of a thousand acres, which he rents for \$1000. The farm was purchased some 15 years ago for \$30,000. Deducting taxes, the owner gets about four per cent for his capital and one dollar an acre for the use of his land. The tenant keeps a dairy of 38 cows, and a good many young cattle and working oxen, in which he trades, perhaps a hundred head in all through the grazing season. He clears perhaps \$2,000 a year, making rather more by his skill as a cattle trader than as a cultivator. This is a shore farm of very good soil, with unrivalled facilities for gathering sea manures. Its products could readily be brought up to \$30,000 a year, paying a profit of four or five thousand to the owner. Close by these farms a man owns 43 acres of land which he values at \$8,500, or over \$200 an acre. It is naturally no better land but much better managed. A single item is 1000 bushels of potatoes from five acres of land. We want more skill and capital concentrated upon the land.

Selection of Seed Corn.

—This should be attended to at the husking, if it has not already been done. Select the ears from stalks bearing two or more perfect ears, and if the corn is not already well cured, tie the ears in strings of a dozen or more, by bridging the husks, and hang them in a room with a fire to dry. The quicker they are cured the better, if they are not damaged by the heat. In the Northwestern States, where the corn is liable to be damaged by the frosts, the best farmers select seed ears before the kernels are glazed, and, after partially stripping off the husks, kill-dry them at a temperature not above 150°. Corn thus treated is said to germinate much quicker, and to mature several days earlier, than that cured in the field. Much seed falls from want of this seasonable attention, and the fields have to be replanted. A few hours of labor now may save weeks in the spring.

Improvement of Sandy Land with Clay Subsoil.

—“R. H. S.,” of Dunbar Station, Pa., says he has a hundred acres of this kind of land, overgrown with blackberry bushes. “Can you tell a sure method to get rid of them? How many bushels of lime ought I to put on to an acre? Would it be good economy to plow under clover, sow wheat, seed it down with clover, and the next season plow it under and sow wheat again? Would the land improve, following up this rotation for years, or would it grow poor? What condition ought clover to be in when plowed under, green or dry?” The persistent mowing of briars the last week in August and feeding the ground close with sheep will gradually reduce and exterminate them. A more rapid remedy is plowing and the thorough cultivation of hoed crops. Wheat once in five years is often enough unless you apply animal manures. From thirty to fifty bushels of lime to the acre is enough to last in the soil for five years. The best usage now is to plow in clover after it has been partially fed. We would recommend the common Pennsylvania rotation, often referred to in back numbers. See vol. 26, page 283. If a summer fallow is adopted, improve it by harrowing the land every two weeks, after it is plowed in the spring.

Pigeon Berry.

—(Phytolacca decandra). “W. S.,” Stoytown, Pa., says he has a piece of new land covered with young plants of this weed. “I am plowing it again before I seed it, but I cannot get all the plants plowed out, as the ground is very rough and rooty. Will the weeds interfere with the wheat?” If it were practicable we should advise the drilling of the wheat 15 inches apart, which would admit of cultivation. The wheat will probably smother a good many of the small plants, and it will pay to go over the piece in the spring, and with a hoe cut off the crowns of the large ones, if any are left. It is not a difficult weed to eradicate with hoed crops, or with a summer fallow.

Farming by Proxy.

—“W. S. R.,” Manorville, L. I., asks if he can run a store, and at the same time oversee the working of 17 acres of land, and make it pay. That depends altogether upon his business capacities. If the land is near his home, so that he can plan the work on the land and have an eye to it at morning and evening, and he can secure a faithful laborer, he might safely try it. He is near good markets and probably has good facilities for making manure—two items in his favor. But at least thirty dollars' worth of manure upon every acre in hoed crops.

Heaven and Sorghum.

—“N. S. C.,” Flanders, N. J. “Can any one tell whether the leaves of sorghum cane, when green, partially or wholly dried, are best known to be injurious to cattle when they have been eaten? One of my neighbors in stripping his cane allowed the leaves to become partially dried, and fed some of them to a cow; the next morning he found his cow lying by the pile of leaves dead.”—If the leaves had anything

to do with the death it was probably a case ofhoven. This is likely to be caused by any kind of succulent food fed in large quantity to an animal not accustomed to its use. Sorghum is as wholesome food for cattle as corn.

Breed from the Best.—It was stated in the recent address before the Vermont State Agricultural Society, that the State was losing its reputation for fine horses on account of the constant sale of its best animals,—a ruinous practice with any kind of stock.

Cooked Food for Hogs.—“Have any experiments ever been conducted to show that it pays to cook the feed of swine? Mine do very well without it, and I do not wish to waste any labor or fuel.”—“C. N. T.,” Thetford. “The best farmers all through the East cook the greater part of their feed, after the swine are put up in the fall, and we think this practice is gaining ground in the West, as corn increases in price. Samuel H. Clay, of Kentucky, conducted a series of experiments in feeding corn to hogs, with the following results. One bushel of dry corn made 5 lbs. 10 oz. of live pork; one bushel of boiled corn made 14 lbs. 7 oz.; one bushel of ground corn boiled made 16 lbs. 7 oz. There are other experiments upon record showing quite as great a difference in favor of cooking. If we save more than half the corn, we may as well invest in a cooking apparatus at once. We shall save labor, or its equivalent, money, by doing it.

The Secret of Cheap Pork.

—“H. G.,” Auburn, N. Y. “What is the secret of making pork economically? Mine always costs me more than I can buy it for.” There are several of these secrets known to the initiated. *First.* A good breed. You may stuff any of the land pikes with any quantity of corn, and he will not fatten. Suffolks, Chester Whites, or grades of any pure breed, will show their keeping. *Second.* Good housing. A pig wants a nice, clean, dry pen to sleep in. The yard may have muck and plenty of litter for manure making, but the pen, or sleeping apartment, should be warm and well strawed. *Third.* Early fattening. Pork is made much more economically in warm weather than in cold. *Fourth.* A variety of food. If cooked Indian meal is the staple, let it be varied with green food while it lasts, corn stalks, weeds, parsnips, and clover, and in winter feed enough cabbage and roots to keep the hogs in a good condition. *Fifth.* Regular feeding, three times a day. A fattening pig should never squeal, and he will not if he always finds his food ready at the regular time. Calculate to have your pork worth no more and perhaps a little less than the feed costs, and look for all your profits in the grand heap of rich manure which the dying porker leaves as a legacy. These secrets make cheap pork in our pen, even at the present price of corn.

Slaughter House Manure.

—“B. B. S.,” Newark, N. J. “My farm is situated near a slaughter house, and I can purchase the manure. Is it worth any more than common stable manure?”—“If pigs are fed upon the offal, and the calves' and sheep's heads and legs are thrown into the yard, as is frequently the case, the manure is worth twice as much, at least, as common stable manure. The bones and blood, and refuse flesh, hair, and wool, are all powerful fertilizers, and the manure of swine fed upon animal food is much richer than that of the common sty. If you compost the slaughter house manure, use six times its bulk of peat or muck.

Pond Mud.

—“Is there any way to prevent mud from settling in mill ponds?”—“J. C.,” Fall River, Mass. None that we are aware of, and if we owned land in the vicinity we should not desire it. The best part of the soil is carried off in the current, mingled with leaves and other vegetable matter. It is the same material that is deposited upon meadows subject to overflow, keeping up their fertility. It is a good article for the barn-yards, compost heaps, or to spread broadcast as a top-dressing upon mowing lands. If there is much clay in it, spread it upon sandy and gravelly lands; if much sand, spread it upon the heavy soils. The more organic matter the better.

Self-Filling Ice-House.

—“S. E.,” Alexanderville, O., writes: “It is stated that ice-houses are constructed and frozen full of ice by means of introducing water from a spring at a point of sufficient elevation. Is the plan a practicable one?” There is no difficulty in freezing a solid mass of ice in an ice-house in the winter, either when the water is thrown from a jet, or otherwise. We have seen no experiment, but presume it will keep quite as well or better than when packed in the ordinary way. The difficulty is in removing the ice as it is wanted in the summer. The ice packed in cakes is easily cut of any desired size. The other would have to be chipped with an axe, which would consume as much time as the ordinary way of storing. Ice on the large scale is stored for about twenty cents per ton.

Our Jersey Bulls at the Westchester Co. Fair.—We were not a little gratified by receiving, a few weeks since, from Mr. Swain, the first prize cards and ribbons worn at the Westchester Co. Fair, by two of the young bulls he had selected from his herd and offer as prizes. We were prevented personally attending this exhibition, but learn that it proved the efficiency of its new management in a gratifying degree.

How to Take Care of a Goat.

"Mrs. E. W. W." asks how to take care of a goat; if they will thrive on hay and corn; what they will eat; how long they go with kid, etc. An associate who lives in the city recommends to feed them on tennepny nails, old posters, and hard-coal cinders, as the goats kept about his residence seem to thrive on that fare. Soberly—goats need air and exercise more than almost any other animal. They cannot well be kept stabled. Good hay, with the scraps from the table (swill), would be sumptuous fare. They are a knowing animal, and will seldom tangle up a tether if fastened out to graze by one. They will gnaw and destroy any cultivated tree or shrub we know of, eat up collars and shirt bosoms, straw hats, books, etc., etc. The goat goes with kid about 150 days.

What Spring Crop on Fall Plowed Sod?

"D. W. L.," of Hardin, Tex., Mo., Iowa, Ill., or O., (which State we know not,) asks: "What would be the most profitable crop to be raised on tame sod, plowed late in the fall and well pulverized? Would wheat do well?" You have your choice among grains between Spring Wheat, Oats, and Barley. If the first does well in your section, and the soil is in good order, sow that, and get it in early, even before the frost is out of the ground. Besides, you may raise potatoes, planted early; at the South, castor beans, first giving the land thorough harrowing and mellowing; flax for seed, if the land is rich and free from weeds, plowing deep this fall, cross plowing and harrowing, or "cultivating" (that is, cultivating) very thoroughly in the spring; and other crops might be named, if we knew the size of the field, soil, and location.

A Guide to the Study of Insects.

The appearance of the first part of Dr. Packard's work was announced some time ago. The third part has just come to hand, and is full of interesting matter about bees, wasps, and related insects, well illustrated. The parts sent by mail from this office at 50 cents each.

Ichneumon Flies and Grasshoppers.

"E. S.," Highland, Kansas, says: "The grasshoppers have found their match in these flies. They are found in great numbers in a dead or dying state, with worms or maggots in them $\frac{1}{4}$ to $\frac{1}{2}$ inch long, with small black or brown heads. Scarcely any fall wheat has been sown in parts of the State on account of the grasshoppers. This country is improving at an astonishing rate."

"Freezing Kills the Eggs."

Greeley is reported as saying, with respect to the destruction of insects: "Fall plowing is also a good remedy if the land is left in ridges. Freezing kills the eggs." To this we say in the words of the Scotch verdict, "not proven." All the testimony points to the indestructibility of the eggs of insects by any amount of natural cold. The eggs of the tent caterpillar, katydid, and all those insects which deposit them above ground, pass our severest winters without injury, and until it is shown by positive experiment that the eggs deposited in the earth are of a different nature, we shall decline to believe that "freezing kills the eggs." If the belief that it does will induce people to plow land in the fall and leave it in ridges, it will not be productive of injury, but of good.

The Cincinnati Horticultural Society's Exhibition.

It was a most enjoyable affair. It was held in the spacious skating rink, which was made so summer-like that one would not suspect that it was a building mainly devoted to winter pleasures. A mile's length of evergreen wreath quite hid the truss work of the roof, and a large fountain, surrounded by rock-work and grotesque plants, occupied the center of the floor. The most noticeable feature was the way in which pot plants were exhibited. Instead of being placed upon tables and stands they were tastefully grouped upon the floor, and so surrounded by turf that the effect of the whole was that of a brilliant and well-kept garden. For beauty of arrangement this far exceeded any exhibition we have seen, and the result was largely due to the taste and hard work of Messrs. Haerlin and Pentland, and the abundant contributions of J. B. Dunnett, Mr. Longworth, Captain Anderson, and others whose names have escaped us. J. S. Cook had a forest of choice green-house plants, remarkably healthy and well grown, and deservedly took the first premium. The collections of evergreens in pots by F. Pentland and S. S. Jackson & Co. were very fine

and interesting. The display of fruits, especially of grapes, was large, but that of vegetables not up to what we expected. Of course we cannot give a detailed report of this splendid exhibition. Much of its success was due to its President, Capt. W. P. Anderson, who worked only as one who has his heart in the cause, and to H. A. Gardner, who is just a second edition of "American Pomology," and seemed to possess the happy faculty of being everywhere at once. Under its present administration the Society will maintain the claim of Cincinnati to be one of the important centers of Horticulture. We cannot close this brief notice of the show without alluding to our pleasure in meeting such veterans in the cause as Robert Buchanan, Graham, Motlier, McAvoy and others, whose love for fruits and flowers seems to strengthen with their years.

The Ohio State Fair was held at Toledo, Sept. 21st to 25th, under the auspices of the Ohio State Board of Agriculture. Though a cold storm interfered with the attendance, it was a grand success. For excellence of arrangement, abundance of contributions, courtesy of officials, and the generally intelligent appearance of the crowd, it excelled any State Fair we have ever attended. The show of stock of all kinds was large, but the rain prevented a full examination. In the department of implements the variety was bewildering. It has been said to be the best exhibition of implements ever made. The mechanical or machinery department was also very full. Indeed, the show was so immense that the single day to which the rain confined us was hardly enough to allow one to take more than a general survey. The halls devoted to specialties were spacious, well arranged, and well filled. The show of fruit was something to gladden one's eyes. We cannot particularize, except to say that the much-neglected quince was here in deserved prominence, that the display of grapes was immense, and that our friend, M. B. Bateman, of Painesville, deservedly took the leading premiums. Floral Hall was full of beautiful things, among which the fine collection of Lenk & Co., Toledo, was conspicuous. The Vegetable Department, facetiously styled "Pumpkin Hall" by its indefatigable superintendent, D. C. Richmond, of Sandusky, was full of excellent products. It was a treat to see that vegetables for once have had a chance as peers and grapes. Among the points of attraction were the temporary offices of the Ohio Farmer and the Toledo Blade, and it were difficult to say from the number of visitors to each, who was the more popular, Col. Harris of the Farmer or Mr. Locke of the Blade, the latter being the well-known Petroleum V. Nashy, Postmaster.

Scabby Leg in Fowls.

"A. M.," writes: "My fowls have been troubled in this way. We call it Gout. My remedy is turpentine, applied, say twice a week, with a small brush or swab. Whoever makes the application must be careful not to let the turpentine run down along the toes, as it is apt to make them bleed. Three weeks will be about the time required for the entire disappearance of the scab."

Underdraining Water Meadows.

—An English farmer broke up thirty acres of water meadow which produced nothing except coarse sedges, grasses and rushes. After it was thoroughly drained and laid down to grass, he was able to cut four crops of green fodder annually of the very best quality. The same thing could be done in thousands of instances in this country.

Bumble Footed Fowls.

—When heavy fowls roost high, as they always fly down, they are very apt to drive gravel stones into the soles of their feet, and to bruise them otherwise so as to cause swelling and soreness. Sometimes, also, corns appear on the soles. These troubles are much more frequent among roosters than hens because they are so much heavier. "J. C. K." describes a trouble, which is probably a corn due to the same cause, possibly hereditary. Corns may sometimes be cured carefully, or loosened about the sides and pulled out. Stuff plenty of lint into the cavity and bind a piece of rag on; it will heal soon if the bird is well.

The American Stud-Book.

—Lovers of the horse, and especially all in this country interested in the thoroughbred horse, should welcome with us the first volume (A to L) of the American Stud Book, prepared by Col. S. D. Bruce, of New York. This contains the pedigrees of "all the imported thoroughbred stallions and mares, with their produce, including Arabs, Barb, and Spanish horses, from the earliest accounts to the end of the year 1867; also all the native mares and their produce." The great value and importance of correct pedigrees of breeding animals are now universally conceded. Those peculiar excellencies or defects which have become, with hardly an exception the inheritance of sire, dam, and foal, for generations following generations, mark a distinct breed and fit it for the uses to which it is ap-

plied. The question "What makes a thoroughbred?" as applied to horses, has been often discussed. If all the blood flowing in a horse's veins can be proved to flow through trained English horses from "Araby the blest," Turkey, Barbary, or Andalusia,—the horses of which countries all have a common origin—all agree that the animal is thoroughbred. If, however, the fact cannot be proved, would it be any less a fact? Then a horse may be a thoroughbred and universally acknowledged as such, and yet the proof be wanting. This, as we understand it, has induced many horse men to record horses as thoroughbreds which had pure crosses for only five generations. It is well known that some of our most famous horses have such imperfect pedigrees, yet no one doubted their thorough breeding. Such, though not showing the requisite *five crosses*, have been included in this volume. It is a handsome octavo, printed on tinted paper, with clear type, and embellished with 30 or more copper plate engravings. Published by E. B. Meyers & Co., Chicago.

Coloring Carpet Warp.

—N. S. Thomas, Painted Post, N. Y., sends the following direction for coloring carpet yarn. "Extract of Hemlock bark is the substance wanted. Wet the warp thoroughly with lime water; then boil in a strong liquor made by dissolving extract of hemlock bark in water. Use a brass, copper, or porcelain kettle (not iron or tin); this gives a tan color. For a black color use strong copperas water in place of lime water. Iron or tin vessels will answer when copperas is used. A slate color can be made by using a small quantity of the copperas water and extract liquor to a large quantity of the warp. A brown color can be made by using only a small portion of copperas with the extract. The shades of color can be changed by varying the amount and proportion of the coloring materials. A little care will enable any one to make desirable colors with these materials, and to modify the colors by using other substances with them. The extract of Hemlock bark is very extensively used by tanners for making leather, and is made at large establishments for the purpose located in or near the hemlock forests."

The Gamgee Meat Preserving Process.

—Professor Gamgee has been spending the summer at the West, preparing to put up beef, mutton and other meats for Eastern and European markets. He recently returned with a fine lot of beef, mutton, prairie chickens, etc., which was exhibited for a week or more before being packed and sent to England. The beef was in quarters, the mutton in carcasses. We partook of some of the steaks and found them most delicious and are confirmed in our good opinions heretofore expressed, and in our best wishes for the success of the process, in the hands of the Gamgee Meat Preserving Company.

Bleaching Wool on Tanned Pelts.

—"J. N.," of Trenton, a manufacturer, sends the following directions: "Put an old pot or other iron vessel in the bottom of a hoghead, and in the vessel a roll of brimstone. Fasten near the top a stick or two, to place the skin on. The wool must be wet, when hung on the sticks. Heat an old iron red hot, or take live coals to start the brimstone. When it is burning briskly cover the hoghead tight to keep the smoke in. In bleaching blankets we put them in after dinner and take them out next morning. If not white enough, repeat the process."

Cork Oaks in California.

—Mr. J. H. Lick, Lick's Mills, St. Clara Co., Cal., planted acorns of the cork oak in 1858, and now has 85 trees, from 15 to 20 feet high and from 8 to 10 inches in diameter. This would indicate that the climate of California is very favorable to the growth of this valuable tree.

Irrigation in Winter.

—"E. H. T.," Stronshur, Pa., "I have a brook, quite small in the summer but running full in the winter. Will it be of any service to turn it on to a meadow with a rather light sandy soil this winter?" The popular idea that irrigation is good only for growing plants is erroneous. Water has a very important action upon any soil where there is good drainage, and makes the inert matter available for plant food. In the most successful case of irrigation that has come under our notice the water is kept running through the winter. The freezing in severe weather makes a complete covering of ice, which acts as mulch. The grass starts early in the spring, and the crop is kept up to two tons to the acre without any other fertilizer than water. There is a mine of wealth in every brook that can be turned upon a dry soil, if the farmer will work it.

More Glass.

—Mr. Peter Henderson, not content with 17 green-houses, each 100 feet in length, has erected another house 300 feet long and 20 feet wide. If Mr. H.'s flower business should continue to increase as rapidly as it has done for a few years past, he will soon have a good part of South Bergen under glass.

Fish Ponds.—"S. E.," Alexanderville, Ohio. Trout will flourish in ponds supplied with spring water, and lime stone soil will not injure the water for their use. There are persons who make a business of selling fertilized eggs, and young fish, especially trout, which are most in demand. They would do well to advertise their stock. The eggs of trout are hatched during the winter, and the young fry are usually forwarded in the spring. They should be kept in a pond by themselves for at least a year, to prevent their destruction by other fish. Persons who make a business of raising trout for the market usually allow no other fish in the ponds, and turn in trout of the same age, so that they may not devour one another. This is the better course, for they are as easily raised as other fish, and always bear a much higher price. Yellow perch, black bass, and pickering, are all good fish for ponds, and live together in the most amiable way, preying alike upon their own, and their neighbors' young. T. Norris has just published a work on American Fish Culture, which contains the latest information upon the subject. For sale by Orange Judd & Co. Price \$1.75.

English Sparrows.—"H. G.," Providence, R. I. "Are the English sparrows a good investment for cities?" Judging from their history in New York they are. They are wonderfully prolific, and clear out most of the smaller kinds of insects. Four pairs of these birds came to Union Square in the spring of 1866 and built their nests. The measuring worms soon disappeared from the trees, so that it was a pleasure to walk under them. In one season they had become a flock of 70, and they are now said to number over 600, besides the multitudes that have gone to the country. They are found now 40 miles from the city. They will eat the farmer's grain, but do they not earn it in the multitude of insects they destroy? A city whose parks are infested with worms cannot do a better thing than to introduce these birds. If provided with houses, and fed and watered, they will abide through the winter, and make the streets cheerful with their incessant twitter and chatter.

Breachy Cows.—"F. C.," Hampton, N. J. "I have two cows that I find it difficult to confine in any pasture. Pokes and other contrivances do not prevent them from throwing down fences and leading the whole herd into mischief. Is there any remedy?" If they are good milkers it will pay to sell them or to tether them; if they are not, probably the best remedy is the beef barrel. We have never known this to fail in the most obstinate cases.

Fattening Cattle in Winter.—"L. D. H.," Sutton, Mass. "Will it pay to stall feed cattle for market at the present prices of grain?" We think not in the Eastern States. Most of the beef that supplies our markets is made from grass in regions remote from market. Your grain will pay better fed to other animals, or sold, if you will buy manure with the money.

Garget and Bloody Milk.—"The use of Tincture of Arnica in cases of garget, caked, and bloody milk, has repeatedly been stated in the *Agriculturist*. These ailments are very prevalent, especially at calving time, and many an excellent cow dies of milk fever, or loses one quarter of her bag for lack of timely attention and a little of this drug. It is in accordance with our principles to give "line upon line," and so we publish a note received from J. E. Morrill, of Hampshire Co., Mass., who thus writes: "I keep a drug store in this town. A gentleman who has purchased a great deal of Tincture of Arnica of me said a day or two since, 'Do you know that Tincture of Arnica is the best thing in the world for garget, in cows? I keep twenty-two, and by giving them a teaspoonful of the Tincture in bran, three times a day, and bathing the bag thoroughly with it as often, they are always cured in a very short time.'"

Treatment of Calves.—"A. N. R.," Gaines, N. Y. "What is the best winter treatment for calves, to make good milkers?" A plenty of good feed and shelter. The practice of keeping them at the stock yard on the poorest fare to toughen them is unprofitable. Put them up early, feed and water regularly, and if they have been of poor quality, supply the deficiency by corn meal, oil-cake, or roots. They should be kept constantly growing, to bring out all their good qualities. The extra care will be certain to show itself in the pail in due time.

Sending Poultry to Market.—"Immense quantities of poultry are sent to market this month and ignorance of the proper way to do it, and sometimes a desire to overreach, causes many serious losses. First, let the birds fast 12 hours. Foolish people often let them eat their fill of corn just before killing them, with the idea that they will weigh more. A fasted bird will keep

a week fresh and plump if well handled, while one that has been fed within a few hours will be sure to spoil, or become more or less tainted. One tainted bird in a case will cut the price on the whole down several cents per pound. So will one that is scrawny and looks bled and skinny, and as if it had been sick. Second, kill without dislocating the neck or making a hole in the skin. The operation is simple. When the fowls are caught, with a lad to hold, tie the legs of all, and lay them down. When ready, hang them by the legs, a few at a time, on long pins or nails; then with a sharp knife passed into the throat, cut once or twice across, letting the knife bear on each side against the back bone. This will sever the great veins of the neck, and the bird will bleed without wetting its feathers at all. Third, pick without scalding, and while the fowls are still warm. Take great care not to tear or bruise the flesh in spots by too hard fingering to get all the pin feathers out. These may be removed with a pair of pinners, if great pains is taken. Draw out the tail and wing feathers first and those of the back last. Fourth, hang all in a cool, airy place over night, and pack in clean, strong cases of a size easily handled by one man, putting 150 to 300 pounds in one case. Take the cords from the legs and lay the birds in uniform rows, heads towards the sides of the box and breasts up. A very little clean wheat straw may separate the layers, but it is best to use nothing. Fill the boxes so full that it will require a little pressure to force the covers down. Address to a trusty agent or commission dealer. It would pay any one who markets much poultry to have a modest stencil plate made to mark his boxes, and to read thus: "Poultry from A. B., well fattened, fasted 12 hours, and not scalded."

Cooking Pumpkins for Cattle.—"L. K. T.," Ashfield, Mass. The utility of this practice depends somewhat upon the feed used in connection with them. Fed raw they are a valuable addition to grass or hay, and greatly increase the flow of milk. If the cows were confined to the stable and there were conveniences for steaming we should prefer to steam the pumpkins with the cut feed and meal. Steaming dry food, as hay and the grains, pays much better than steaming vegetables.

Infringing Patents.—"L. H.," A man has no right to make a patented article upon his own premises, for his own use. The patentee gets his right from the government, to prevent this very thing. When his patent expires the public will have the full benefit of his invention. This probably is the best course for the public, as well as the patentee; for useful inventions are much more generally advertised and introduced through the enterprise of the discoverers, stimulated by the hope of gain, than they could be by any other method. The exclusive right enables them to command capital, which would otherwise be withheld.

Blooded Stock Among Small Farmers.—"How can they be introduced where no one has capital enough to purchase suitable breeding animals?"—"A. K.," Peru, Mass. The thing can be accomplished by a joint stock company or a neighborhood effort without the formality of any organization. A half dozen farmers owning altogether fifty cows might unite in purchasing an Ayrshire or Jersey bull, and thus secure nearly all the benefits of individual ownership. If a good bull were thus secured in a neighborhood, and the superiority of his stock once established, cows of the same breed would soon be introduced, and the dairy stock be greatly improved. Fine stock, purely bred, of horses, cattle, sheep, and pigs, is now so greatly multiplied that it is within reach of every district, if farmers will unite to secure it.

Rotary Spader.—"J. K.," Wyoming, Kansas, inquires for Constock's Rotary Spader. We believe no satisfactory spader for horse or steam power has yet been brought before the public. Or if this be so the inventors have a very poor faculty of making the public see it. Something of the kind is very much needed, but for the present we shall have to put up with the Michigan plow, as the best implement to make a good seed bed.

Fall Plowing.—"There are several advantages in plowing at this season. The soil, if left in a rough, loose state, is thoroughly exposed to the weather for several months. In the repeated freezing and thawing, it undergoes chemical changes, and a larger supply of food is made available for the crops. Then if manure is spread broadcast and plowed under it is more evenly distributed, and incorporated with the soil, and the next crop receives more benefit from it. If plowing be deep, a multitude of grubs are brought to the surface and destroyed. The seeds of weeds also germinate when the plowing is early enough, and thus another enemy of the crops

is damaged by the frost. The teams are now usually in the best condition. They have had full feed in the summer pastures, and are strong for labor. In the cold, wet springs to which we are liable, it is of great advantage to have as much of the plowing done in the fall as possible. Then no time is lost in waiting for the weather, and the seed can be put in, in due season. Care must be taken not to expose land liable to wash to currents of water, as serious damage is often done to stubble land in this way. Clay soils are most benefited by fall plowing. Stubble land, to be as much exposed as possible to the changes of heat and cold, is often thrown up in ridges of two furrows turned together. These are split in the spring and harrowed, to prepare for grain or potatoes.

Small vs. Large Potatoes for Seed.—"I. G.," Thomaston, Me. "Has it been decided which is the better practice?" Perhaps not fully, but many good cultivators have decided and practice accordingly, some with large potatoes, and some with small. We have tried both, and think the result depends much more upon the quality of the soil and the cultivation than upon the size of the seed. We generally plant potatoes about one inch in diameter, on good soil, and give thorough cultivation. The yield is satisfactory. Dr. Hexamer's experiments show an excess of large potatoes from large seed. See volume 25, (March, 1866), page 98.

Burdock Patches.—"N. T.," Riverhead, L. I. "I have several plots of burdocks that grow with more uniformity than any garden crop. I have fought them ten or twelve years, and they still live." Is there any remedy?—"Your patches are probably well stocked with seeds, and it will take several years to eradicate them. Cut off the plants just below the surface of the ground with a sharp hoe in the fall, and burn the tops, and you will destroy the present season's growth of burrs. Follow this a few years and you will conquer. If the patches are enclosed, and can be cultivated, they can be destroyed much sooner.

Value of Immigration.—"We have an average of over 200,000 people coming to us from Europe every year. The statistics show that they bring with them an average of \$70 per head, and they are estimated to add \$1000 each to the producing power of the country. This is an addition of over 200 millions of dollars to our capital. Most of them are in the prime of life, and they proceed at once to the cheap lands of the West, where they carve out homes in the forest and upon the prairie.

The Canada Farmer and the Fair of the N. Y. State Agt. Society.—A visit to the Provincial Fair at Hamilton, and the week after, to the N. Y. State Fair at Rochester, suggests some comparisons. The first thing that strikes a visitor from the States is a certain English cast in the implements. The plows are frequently made of iron, have almost invariably long handles, the point long with a narrow wing, a very convex moldboard set so narrow that while it is short twice as long as many American plows, it does not turn nearly as wide a furrow. Next we notice a dozen or so different patterns of double moldboard plows for making ridges for turnips, all modeled after those used in England. The harrows are frequently made of iron, and sets of four harrows that would take a wide sweep are not uncommon. The cultivators have narrower and longer teeth, and strike the ground less abruptly than those in the States. Sometimes, too, they have two sets of teeth, that can be changed, one flat and wide for cutting up weeds, and the other narrow for merely stirring the ground to a considerable depth. Turnip drills with rollers for sowing the seed on ridges are another feature.

At Hamilton, as at Rochester, the horses were boxed up in a way admirably adapted to keep visitors from seeing them. We should judge, however, that the tendency in Canada is for powerful, active horses, adapted for the heaviest kind of farm work, while ours run more to style and speed. In cattle the show in Canada was, on the whole, far superior, both in number and quality. For the Prince of Wales Prize, for the best herd of five cows and one bull of any breed, there were six entries—three Short-horns, two Herefords, and one Galloway. They were shown in a large ring where they could be seen to good advantage by thousands of interested farmers. We have rarely, if ever, seen as fine a lot of cattle together in one ring. At Rochester, leaving out the birds brought from Canada, we had a very slim show. The Short-horn Vanderbilt, of Geneva, James O. Sheldon, did not exhibit, as he has already taken all the honors. Hon. A. B. Conger and Hon. Ezra Cornell showed excellent Short-horns, and the Hon. Mr. Campbell, of New York Mills, as fine a herd of Ayrshires as can be desired. W. B. Dinsmore, and others, made a good show of Alderneys, and there were some good lots of Devons. But on the whole the display would not compare with that at

Hamilton. The same is true of sheep. We expected to see a grand display of Cotswolds, Leicesters, and South down sheep in Canada, and were not disappointed, but there were actually more "American Merinos" shown at Hamilton than at Rochester. The sheep fever was not as high in Canada as here, and the reaction is not so severe. There was a magnificent display of Long Wools, and also of the different varieties of Downs—Sussex, Hampshire, Oxford, and Shropshire; but the former, there as here, are apparently more popular on account of their larger size and of the demand for combing wool.

In thoroughbred pigs there was a miserable show at Rochester, and a capital one at Hamilton. Our State Society does nothing to encourage the raising or importation of thoroughbred swine, while in Canada much attention is devoted to these useful animals. Any pig imported during the year, if it takes a prize, is awarded a premium of double the ordinary amount. Accordingly there were several pens shown that had been recently imported. At Rochester there was not one. There were one or two pens of Yorkshire and Essex, and it may be of Suffolks. The rest of the swine on exhibition were Cueshires or grades, that should have been shown as such.

In wheat, barley, oats, peas, and vetches, the competition was far greater than with us. The farmers take an interest in the matter, and the bags were constantly surrounded, and their contents examined and discussed. At Rochester there was the best display of grains we have had for years, but the barrels were all headed up, and so far as the public good was concerned, they might as well have been in the barn at home. In corn, beans, and potatoes, the show was superior to that at Hamilton; so it was in fruits and flowers, and perhaps in garden vegetables; but in roots for stock, such as Swedes, carrots, parsnips, and mangel wurzels, we "cannot hold a candle" to the Canadians. At Rochester there was a great display of agricultural implements and machines, and an excellent one also at Hamilton, but in this department we need not fear comparison. We had several excellent ditching machines, that did good work. There was one in operation on the grounds at Hamilton that was not worth a "Yankee shipplaster." We had three good machines for husking corn, a dozen or so of potato diggers, some of much promise, a good steamer for cooking food, scores of good plows, cultivators, etc., churns, butter workers, wringers and washing machines without number, and for visitors as grand a company of intelligent men and women as can be found in any country.

Spring Barley.

The following is from a farmer in Western N. Y. "Spring barley requires richer land than winter wheat. The roots do not extend half as far, and the crop grows so rapidly, especially in this climate, that it is necessary to have a liberal supply of food in the ground. Fifty bushels of barley take no more plant-food from the soil than forty bushels of wheat, but we need more plant-food in the soil because the roots have not time to push out far in search of it, as is the case with winter wheat. For this reason I am inclined to think it will be well to summer-fallow good, strong land for barley, and follow it with wheat. We should in this way get rid of red-root.* Of course we need not break up the land as early as for wheat. Plow, say in August, and harrow well, and then after we are through wheat sowing, plow again a little deeper; and if there is time, and the weather favorable, plow it again the middle of November, and leave it rough for the winter. The barley might be put in early in the spring, simply by harrowing or cultivating. In this way we divide up the work better. Summer-fallow one field for wheat and another for barley. If the whole is summer-fallowed for wheat there is little for the teams to do after the middle of September, when they are better able to stand hard work than during the heat of summer. Autumn is the time to work land."

PAINT IN THE TOOL ROOM.—Paint pots and brushes are among the good investments upon the farm. They are suggestive of carefulness and of thrift. The essential materials in a good paint are Linseed oil and white lead. Coloring

matter is cheap, and not much of it is needed to give any desired shade. Not much skill is required in the mixing, and any farmer can soon learn to paint his own buildings, tools, vehicles, and fences. Tools last much longer if their woodwork is kept well painted or oiled. Linseed oil, well boiled, without the lead, makes an excellent protection for axe helves, and the handles of all tools that are much exposed to the weather. The painting and oiling of tools is good wet weather work, and there are always leisure days after the harvests are gathered, when the fences and farm buildings can be cleaned up and painted. Cheap paints are usually poor investments, except as they may be useful for specific purposes.

Steamer or Mill?

Cooking grain for cattle and swine is certainly the best substitute for grinding it, and the steam apparatus has a much wider application than the farm mill. So that for a farmer engaged in common mixed husbandry, there can be no question which he had better buy, a farm mill or a steam apparatus. With a steam boiler, in which steam may be economically raised, all kinds of grain, roots, root-tops, cabbages, hay, in fact any kind of hog or cattle feed, may be profitably cooked, even if fuel is not cheap. The question of the profit of having his corn ground if a farmer has a good steamer or boiler, we cannot now answer, but from what facts we now have, we are induced to think cooking preferable. We know very well that ground corn will go a great deal farther in fattening pork or beef than whole corn, and that cooked meal will go further still. We know also that cooked whole corn is of a much higher feeding value than raw, that it is more easily digestible, and more palatable. Who can give us the figures by which we can compare the feeding qualities of simply cooked and simply ground corn?

How and When to Milk.

As a general rule, farm men dislike to milk, and consequently seldom do it well. In the dairy districts, where milking is one of the most important labors on the farm, it is not difficult to get good milkers, but in the grain districts it is easier to get ten men who are good teamsters than one who can milk rapidly and clean.

It is not so important to milk rapidly as it is to keep up a steady flow. To milk fast one day and slow the next is injurious. If the milker becomes tired, it is better to rest when he has finished one cow and before beginning another, than to rest or lag during the operation. An irregular milker will soon spoil a cow. She will not give down her milk steadily. On the other hand, a cow that is milked steadily will give down her milk freely and with a steady flow. Such a cow can be milked in five minutes. We have a cow that gives about 10 quarts at a milking, that we have milked in 4½ minutes. After letting a poor hand milk her a few weeks we could not milk her clean under seven minutes. We have little doubt that a poor milker, although he strip the cow clean, will cause her to give less milk. This is the general opinion of dairymen, and is doubtless correct. It is certain, if a cow is not milked clean she will gradually fail in her milk. And it is equally certain that the last drawn milk is much richer than the first drawn. Experiments show that the strippings contain four or five times as much

cream as the rest of the milk. As a check on careless milkers, it is best to have a member of the family or some trustworthy person go over all the cows after the milking is finished, and strip every drop of milk from the udders. With an empty pail this is little trouble. Some object to the practice on the ground that "the cow should be milked clean at once." This is true, but it will be found that when the practice of stripping is regularly adopted, the cows will be milked much cleaner than where a perverse or careless milker knows he is in little danger of being detected. We have known a good and usually reliable man to leave four quarts of milk in the udder! In milking it will be found that "even the best of men are none the worse for a little watching."

It is not easy to describe the operation of milking. It can be learned only from example and practice. Our own method is to have a three-legged stool, as being firmer than the one-legged kind sometimes used, and to hold the pail up from the ground firmly between the knees. We do not like to see a man stick his head against the side of the cow. There is no advantage in the practice, and the position is not as good for the free action of the muscles of the arms and hands as to sit upright. Grasp the teats firmly, with all the fingers, if possible, and close the upper finger a shade earlier than the lower ones, in order to keep the milk from being forced back into the udder. The principal work will be done by the three lower fingers. Some good milkers pull down on the teats, but this is unnecessary. A steady contraction of the fingers is all that is required; the pressure forces out the milk, and when they are opened, the elasticity of the teat forms a vacuum, and a fresh supply rushes in, which is forced out as before. This is all there is to milking. It is one of the simplest and pleasantest of operations, and we can but think that the reason so many farm men object to it is based on prejudice and perversity.

Where but few cows are kept it is seldom convenient to milk at the same hour at night as in the morning. As a general rule, cows are milked before breakfast, say from half past four to half past five; and at night from half past six to half past seven. At night, therefore, we get the milk from 14 hours, and in the morning from only 10 hours. Prof. S. W. Johnson, in his "Notes on Recent Progress in Agricultural Science" in the Am. Agricultural Annual for 1868, gives the results of some experiments, which show that the milk after an interval of

10 hours contained	4.36	per cent fat.
11 "	4.31	" "
12 "	3.97	" "
13 "	3.97	" "
14 "	3.51	" "

When the above system is adopted, therefore, the night's milk would, other things being equal, be about 20 per cent poorer in butter than the morning's milk. Dr. Voelcker, in his admirable article on Milk, in the Journal of the Royal Agricultural Society, says: "The popular opinion ascribes to morning's milk better quality than that obtained in the evening. My results do not favor this all but generally received opinion. As far as my experience goes, the result depends on the quality and quantity of the food which is given to the cows four or five hours before milking. If the supply of food given in the day-time be good and plentiful, and that furnished in the evening be unnutritious and scanty, the evening's milk is of the better quality. On the other hand, when the cows get a good supply of rich food in the evening, and are stinted or fed upon very watery food during the day-time, the evening

milk is the poorer. * * * Out of 32 samples taken in the morning and the evening of the same day, I found in 8 cases the morning milk poorer than that of the evening; in 4 cases, richer; whilst in 4 there was no perceptible difference."

The fact is not mentioned, but the probabilities are that the cows were milked at the same hour morning and evening. Where, as in this country, they are milked later at night than in the morning, the "popular opinion" that the morning's milk is richer is correct, as shown by the above experiments quoted by Prof. Johnson.

The composition of morning and evening milk, says Prof. J., "exhibits a constant, though slight difference, which, in general, consists simply in containing *half a per cent* more fat at night than in the morning. In the morning milk this fat is replaced by almost precisely the same quantity of water." These cows were milked at 6½ to 7½ A. M., and 5½ to 6½ P. M. In other words, an hour later in the morning than at night, and consequently the night's milk was the richer in butter. That the milk contains a less percentage of butter when the milking is delayed an hour or two seems to be proved.

In the dairy districts, there is no difficulty in milking at the same hour night and morning. It is a regular and important part of the daily work; but where only a few cows are kept it is not so easy. During harvest, for instance, we have known cows not milked until 8 o'clock in the evening. That this is an injury to the cow and a loss to the farmer cannot be doubted. Our own practice is to attend to the horses and feed the pigs, etc., before breakfast, and milk immediately after breakfast—say 6 o'clock; and at night to milk as soon as the teams can be put in the stable and fed—say 6½. This makes only half an hour's difference.

It is also essential to treat the cows with the greatest gentleness. Never suffer a harsh word to be used or permit loud talking. To kick a cow should be an indictable offence. A cow is susceptible to kindness, and will surely repay it. Women make the best milkers, and a cow will give more milk when habitually milked by a woman than by a man. If our barn-yards were kept as clean as they should be, we should see more farmers' wives and daughters drawing rapidly and gently the rich milk from our generous cows. Where dairying is not the special branch of farming, let the good wife have all the butter money, and do not borrow from her and forget to pay.

The Value of Grade Cattle.

The author of "Walks and Talks" writes: "Our Agricultural Societies make a mistake in not offering more liberal prizes for grade animals. It is all very well to offer prizes for the best Short-horns or Devons, but farmers have comparatively little interest in the matter. The raising of thoroughbred stock will be, and must be, confined to professional breeders. Farmers who keep cattle simply for meat or milk do not want a herd of pedigree animals. "If you raise Short-horns," said the herdsman of one of our well-known breeders, "you must raise them as Short-horns." In other words, give the calf the milk of at least one cow all summer, with what oil cake, grass, etc., it will eat in addition. Now this is all very well and perfectly proper. It is the only way in which to develop that tendency to lay on flesh, for which the breed is celebrated. Keep up the system from generation to generation, and the tendency to consume large quantities of food and convert it into large

quantities of beef becomes established, and this desirable quality is imparted to the offspring. But we cannot afford to raise stock for ordinary purposes in this way. It is the province of the breeder and not of the farmer. The value of the Short-horn consists in its ability to impart its qualities to common stock—to give us grades that have little offal, and that will convert a large quantity of food into beef or milk. It is the grades that we want, and it is the grades that should be shown. John Johnston once said to me, "I don't care for pedigree. Let me put my hand on an animal and that is all I ask." This is true in the sense in which he intended it. His own experience proves, however, all that the most enthusiastic advocates of thoroughbred animals claim. He is a neighbor of Mr. James O. Sheldon, who has Short-horns second to none in the world, and Mr. S. allowed Mr. Johnston to send a favorite cow to one of his best pedigree animals. Mr. J. gave the calf the same treatment he would any other calf, and nothing more. He never starves any animal, and did not starve this one. But it was not stuffed or forced. It had no grain and received only ordinary treatment. Perhaps I should take that back, for, as Mr. Cornell once remarked, "ordinary treatment" consists in keeping a calf so that it shall lose in the winter half what it gains in the summer. The calf received *good*, ordinary treatment, and nothing more—such treatment as any farmer can afford to give. Well, when I was there the calf had grown to be a steer, and was 26 months old. A butcher came along and offered Mr. Johnston 10 cents a lb. live weight, and take him at 1,400 lbs., or \$140. He would not sell him, though thinking that he overestimated the weight. Mr. J. wanted me to see him weighed, and I did so the next morning. After fasting all night, he weighed 1,360 lbs. So much for pedigree. Now it is just such animals that I want to see exhibited. I cannot go into raising thoroughbreds; I have not money enough. But I can afford to raise good grades. All that we need is thoroughbred bulls. And it is so with sheep, and with pigs, and I presume with poultry also. Let us see what the use of thoroughbred males will do when crossed on common stock. Let us have a good show of grade animals at our fairs.

"I have some thoroughbred Essex pigs. And I have also some grade Essex. That is to say, pigs from a common sow, crossed with a thoroughbred Essex. The thoroughbreds and the grades have the same treatment, but the grades, of the same age, are decidedly ahead. The grades have all the symmetry, fineness of bone, and tendency to fatten, of the thoroughbreds, and have the vigor and hardness of the sow. To exhibit the thoroughbreds does little good; but an exhibition of grades, fit for the butcher, would show farmers the advantage of using thoroughbred males, even with common sows."

A Settled Policy on the Farm.

The whole secret of the successful farmer often lies in his having a fixed plan of operations. Multitudes have no plan but to meet their immediate necessities and make money by the easiest and seemingly shortest methods. If wool brings high prices, they will gradually give up dairying and work into sheep, with the expectation of making their fortunes. If wool and mutton raising for a time does not pay, they sell their flocks at a great sacrifice. If hops are sixty cents a pound, they invest in hop poles and kilns for drying, and expect sudden

wealth. If, when their yards come into full bearing, the prices fall off one-half or more, they are disgusted, and ready to plow up their yards, concluding the business will not pay. There are men who are always taking up a good thing a little too late to make money by it. The farmer cannot afford this continual change. His business is less speculative than any other, and, after providing for the wants of his family and stock, he should give his attention steadily to the production of a few animals, crops, or other products, on which he can rely to raise money. Any branch of farm industry, steadily followed, will be found profitable. Dairying, in a year of short grass, might not pay very well. But the years of drought are exceptions, and the man who makes first-rate butter or cheese will find them a reliable source of income. Where a specialty is made of some one crop, it is particularly important that he should follow it steadily. The raising of hops or of tobacco requires fixtures that are useless in any other branch of farming, and the change of crops involves a considerable loss of capital. Besides, we are always learning in a business to which we give habitual attention, and this knowledge is as much a part of our capital as the money invested in tools and buildings. If a man should make potatoes his leading crop, he would study to lessen the cost of production, and would resort to devices in the preparation of the seed and the soil, in the use of manures, and in cultivation, quite unknown to the farmer who pursues a careless style of husbandry. He could raise potatoes cheaper than his neighbors, by means of his improved methods, and if he sold at the same price, make more money. Whatever branch of farming you follow, stick to it, if it is moderately profitable. Lay your plans far ahead, and be prepared for the exceptional years, when large profits come from high prices, or losses from unfavorable seasons. A mixed husbandry is always the safest, and is not at all inconsistent with the cultivation of commercial crops, as tobacco, hops, flax, onion seed, or vegetable seed of any kind, garden vegetables for market, fruits, etc. The introduction of these requires close calculation, definite plans, and thorough business management, if success be attained.

Burning Straw at the West.

This practice, which prevails so generally in the new settlements, is exceedingly wasteful. No sight is more common than immense piles of straw left to rot in the fields, or given to the torch, as the quickest method of riddance. The ashes, indeed, are restored to the earth, but not to the soil. The few square rods on which they lie are scarcely benefited. All the organic part of the plant is dissipated and lost by the burning. It will be said, in justification of the practice, that there is no market for the straw, and it is an incumbrance upon the soil, and perhaps, also, that the land is rich enough without it. Every farm should have a good home market for straw. Great use is made of a portion of it for fodder by our best farmers, and the manure from the extra stock thus kept is returned to the soil. It is largely used for bedding, and the cattle yards are kept thickly covered with it. It would pay better to spread it upon the soil where it grows, and plow it in, than to burn it. It helps make a cheap and warm hovel for cattle, before the settler has time to build his barn. Save the straw, for even the virgin soil will soon need it to keep up its fertility.

Dairy Cattle—Ayrshires.

It is not a great many years since the breeders of Great Britain discovered a beautiful breed of cattle, having great excellences and strong characteristics, among the lowland Scotch, in a district where but a few years before, a very undesirable native breed had existed. It appears that the chief improvements in the cattle of the district of which the county of Ayr comprises the principal part, were made by the introduction of Dutch and Short-horn blood, for the purpose of increasing milk-giving and feeding qualities. There is little doubt, however, that good breeding and judicious selection have done quite as much as foreign blood towards the formation of the breed. Even during the past fifteen years the Ayrshires have changed notably, improving in form and uniformity of characteristics. Recent importations are an improvement upon the old, and yet they indicate but little, if any, more rapid advance than has occurred among the herds of our most intelligent breeders.

The Ayrshires have been bred for milk in a country where quantity and quality were both desirable, where the pastures are only moderately rich, and where rapid fattening for the shambles was also a desideratum. The result is a breed of no more than medium size, many being decidedly small, hardy, easy keepers, yielding a large quantity of excellent milk, rich both in butter and cheese. The claim set forth for the cows is that they will give more and better milk on the same fare than cows of any other breed. This, we believe, is not disputed, certainly not by the champions of any British breed. They also are good feeders. Ayrshires have been known in this country since 1822, when we believe the first importation was made. The stock

was kept pure, however, but a few generations, as it became blended with the Short-horns. These animals were recorded as Short-horns in the first volume of the *Am. Short-horn Herd Book*, edited by Mr. L. F. Allen, and it would be interesting to trace their blood, if perchance it may not now flow in some of our noted

Short-horn herds. In 1831 other animals were imported, and ever since that time the breed has grown in favor. Its characteristics are strongly marked. In some respects the breed closely resembles the Short-horn, particularly in general form, the shape of the head and horns, and the delicacy of the limbs. The animals are pre-

excellently liberal feeders. She is characterized by a very fine neck, small bones, a delicate tail, large, broad udder, and immense milk veins. The local colors of the body prevent these veins from showing at all in the photograph, from which we have not departed in the engraving. This cow is grand dam of several of the fine

young animals offered by the Publishers as premiums to canvassers for the *American Agriculturist*. The imported cow "Flora" is the property of Mr. William Birnie, of Springfield, Mass. This cow was the winner of the first prize and also of the sweepstakes prize of the New England Ag'l Society, at Brattleboro, Vt., in 1866. The larger apparent size of the animal, as compared with Dolly's, is through an oversight, as she is not a larger cow. That the Ayrshires are a harder race of cattle than the so-called natives is the

concurrent testimony of those breeders who have given both a fair trial. Their record stands unrivaled as milk producers. The yield of butter varies, but the milk is almost always rich, and that of butter correspondingly large—fully as great as that of the Jersey, though lacking the peculiar Jersey color. The milk is besides very rich in cheese-forming constituents, which gives the cows a high value in the dairy districts both of Great Britain and America. In regard

to the first introduction of Ayrshires into this country we are surprised to notice the importation above alluded to, (which was made by Mr. H. W. Hills, a New York merchant, who sent the bull and cow imported to Mr. Hezekiah Hills, of Windsor, Conn., in the year 1822,) entirely ignored by Mr. Allen, in his recent work on American cattle. This importation has been made the subject of investigation, from the fact that the animals were called Short-horns; and we wonder that it is thus overlooked. These animals, "Jenny" and "Eclipse," were bought of Mr. John Fifer, an Ayrshire breeder, whose estate was in the immediate vicinity of Glasgow, Scotland. Some of their descendants were famous milkers; one a half Short-horn cow, called "Old Cream Pot," gave 36 quarts of milk per day, and made 18 pounds of butter per week.

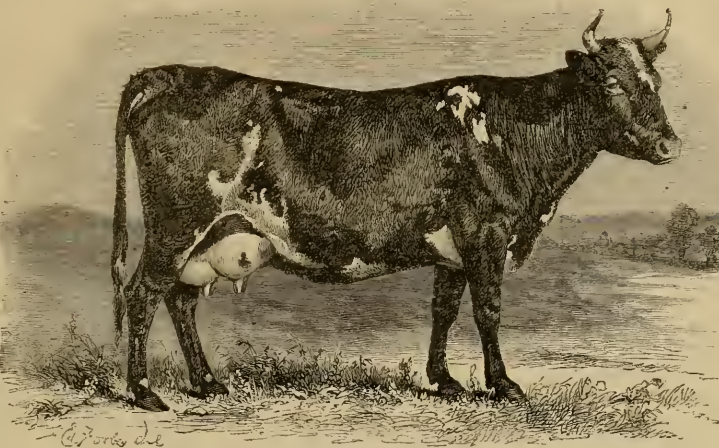


Fig. 1.—AYRSHIRE COW "DOLLY 3RD."



Fig. 2.—IMPORTED AYRSHIRE COW "FLORA."

cows of this breed. "Dolly 3d," (No. 55 of *Am. Ayrshire Herd Book*), is the property of S. M. & D. Wells, of Wethersfield, Conn. She gave by actual measurement from March 25th, 1866, to Dec. 31st, 1867, inclusive, 10,000 quarts of milk, on no better feed than the rest of the herd of which she is a member; but her owners are

concurrent testimony of those breeders who have given both a fair trial. Their record stands unrivaled as milk producers. The yield of butter varies, but the milk is almost always rich, and that of butter correspondingly large—fully as great as that of the Jersey, though lacking the peculiar Jersey color. The milk is besides very rich in cheese-forming constituents, which gives the cows a high value in the dairy districts both of Great Britain and America. In regard

Walks and Talks on the Farm—No. 59.

Three years ago we cut an underdrain through a field that is now in clover, and I observed that the clover seed on the drain was at least twice as good as on the rest of the field. It was not owing to the influence of the drain, or it would have extended for a rod or more on each side. It was just the width of the drain, say a narrow strip of about fifteen inches. The clover was as high again, thicker, heavier, and better everywhere, distinctly marking the whole length of the drain. It can be owing to nothing but deeper tillage. The fact has satisfied me that we do not plow deep enough on my farm, whatever may be the case on others, and henceforth in the fall of the year, I shall aim to put three horses on the plow, and go an inch or two deeper than the land has ever been plowed before. We do not now plow more than six inches deep, on the average, fairly measured. Such plowing was, perhaps, all very well when the country was new and the soil full of "natural manure," derived from the decay of leaves, and the ashes of trees; but on the old fields this source of fertility is nearly exhausted, and we depend now on the decomposition of the soil itself. When the surface soil was full of manure, there was little advantage in turning up two or three additional inches of raw subsoil; but now the subsoil is often much richer than the six inches of surface soil that has been worked for years, and an additional two or three inches brought to the surface in the fall of the year, and left where Jack Frost can tear it to pieces, will soon make capital land. The Deacon put down his new Ward jointer plow ten inches deep in plowing this spring for oats. The subsoil, he had always supposed, was a stiff, raw clay, but he says that this fall, in working this deep plowed land for wheat, he was surprised to find that the three or four inches of new clay that he turned up was gone, and a rich looking, mellow loam left in its place. On my own farm I find that what the men call "clay spots" are not clay at all. Underdrain them, plow them well when dry, work them thoroughly, and they become the best wheat and barley land on the farm, and I think in a few years they will also produce good corn.

The Doctor spent his vacation in Vermont, with some old friends who are farmers. "They all take the *Agriculturist*," he said, "and read the Walks and Talks, but they would like them better if you had more to say about dairying. They charged me to ask you what was the best way to renovate their old meadows and pastures. On one farm there was a wet strip of land in a meadow that produced little but tall, coarse grass, and rushes, and I finally induced the son to dig a ditch through it, and the day I left he went to Rutland for tiles to lay it with. No land could lie better for draining. There is abundance of fall, and yet there are acres and acres, and that of the richest land, that are unproductive, for want of a few ditches. I tried to persuade the young men that it would be far better to stay at home and improve the old farms than to go West, as so many are doing."

When there is much low, rich land on the farms, the way to renovate the meadows and pastures is to drain this rich, but now useless land, and with the large crops which it would afterwards produce, make manure for the poorer portions of the farm. This is the first step, and when once taken the rest is easy. You can make double the quantity of manure. The next step is to improve the *quality* of the manure—

to make one load worth as much as two or three. This can be done by feeding more grain or bran or oil-cake to the cows, and using means to prevent the manure from running to waste. With plenty of rich manure it is an easy matter to renovate the old pastures and meadows. A good pasture ought to support a cow to the acre, with perhaps a little green corn fodder during the dry weather in August. If it would not, I would try hard to make it. Drain every low spot, irrigate wherever it is possible, make the yard or stable manure into piles, and mix with it, at the rate of 500 lbs. per acre, some good bone-dust, or 200 lbs. per acre of Peruvian guano, or perhaps better still, 400 lbs. per acre of some good fish manure, and turn over the pile two or three times, until it is well decomposed, and then top-dress the pasture with it in the fall or early spring, and my word for it the land in a year or two will carry double the stock. "But will it pay?" At present prices of cheese and butter and beef, nothing will pay better. Suppose a man has a 200-acre farm, worth \$100 an acre, that now keeps 50 cows, and he buys 200 acres more for \$20,000, and then keeps 100 cows; on the other hand, suppose instead of paying \$20,000 for the additional 200 acres, he can succeed in making his old farm keep 100 cows, he would have just as large an income, with less taxes, less fences, less roads, and less expenses generally. If the expense of renovating the old farm was \$20,000, he would be just as well off as if he bought 200 acres more land. But it can be done for half the money, and have \$10,000 to buy additional stock and put up new barns.

"What! spend \$10,000 in draining and manuring the old farm, and \$10,000 in additional buildings and stock?"—Why not? But I know it is useless to propose such a thing. It seems easier for a farmer to find \$1,000 to buy more land than to raise fifty to spend in draining and manuring. Farmers have capital enough—many of them, at least—but they have not faith enough in improved farming to use it in enriching their land. As I have said, in the case supposed, it would pay to spend \$20,000 in draining and manuring a 200-acre farm, quite as well as to lay it out in buying a new farm. But of course it would cost no such money. Let a young farmer use \$2,000 for this purpose, and in the course of a few years the old farm would produce double what it does now. In other words, he makes \$2,000 go as far as \$20,000. He would keep as much stock on the 200 acres as on the 400 acres, make as much manure and be able to put on double the quantity per acre, and thus permanently enrich the land.

The Doctor believes in small farms, well tilled, and I knew this kind of reasoning would please him. "The small farms," he said, "are being bought up by the larger farmers in Vermont, and they tear down the old houses, and this makes it difficult to support schools and churches."

The same tendency exists here, and it is useless to argue against it. If the large farmers have capital enough, and are all able and willing to employ it to the best advantage, no great harm will be done. This kind of farming will be more attractive to young men of energy, intelligence, and ambition, and they will be less likely to leave the farm for the excitements of city life. Some of our agricultural writers and speakers complain that the proportion of producers to consumers is rapidly decreasing, and they argue that this is an unhealthy state of things. Perhaps it is, but it is rather strange that farmers should complain of it. Who ever heard a grocer or a dry goods merchant complain that his competitors were leaving the bus-

iness? Do manufacturers complain that the demand for their products is increasing faster than the supply? It looks now as though farmers were about to receive ample compensation for all the skill, intelligence, and enterprise they can bring to their business. Good farming will now pay as it has never paid before. Owing to the high prices, even a poor farmer, if he has a large farm, and is out of debt, manages to make a living, though much of his profits is more apparent than real. A neglected corn crop may pay \$100, and injure the land for future crops to double the amount. But let us figure what a good farmer can do with 400 acres of choice land, every acre capable of yielding large crops, and selling nothing except butter, cheese, meat, wheat, barley, potatoes, and clover seed.

80 acres Wheat, 40 bushels per acre, @ \$2.50.....	\$2,000
80 " Barley, 50 " " " @ \$1.65.....	\$1,320
40 " Potatoes, 200 " " " @ \$1.00.....	\$8,000
80 " Clover seed, (3d crop) 4 bus., " @ \$8.00.....	\$2,560
80 " Pasture, keeping 80 cows, @ \$50.00.....	\$4,000
40 " Corn, roots, &c., " " " " " " " " " "	
80 " First crop clover, say equal 160 tons hay.	
1,000 sheep fitted in winter, gain say, \$5.00.....	\$5,000
	\$39,560

The straw from the wheat, barley, and clover seed, with stalks from 40 acres of corn or roots, with 160 tons of hay, or its equivalent in green food for soiling, and the corn from 40 acres, say 80 bushels per acre, or 3,200 bushels shelled corn, with say 50 tons of oil-cake, would support the stock named and the necessary horses.

The expenses may be estimated at:

Labor, \$12.50 per acre.....	\$5,000
50 tons oil-cake, @ \$50.....	\$2,500
Artificial manures.....	\$3,500
Incidental expenses.....	\$2,560
	\$13,560
Profit.....	\$26,000

This is a profit of \$60 per acre, and you will observe that I have said nothing about sundry little perquisites, such as pork, poultry, eggs, &c. These, where so much grain is raised, and so much stock is kept, would amount to quite a little sum. Cannot such results be attained? I know of more than one farmer whose wheat sold this year for \$100 per acre, and on my poor farm I raised on one field 50 bushels of barley per acre, and sold it for \$1.65½ per bushel. It is not a difficult matter to raise 200 bushels of potatoes per acre, and they are now selling at \$1.00 per bushel. With the aid of guano, 300 bushels might be obtained on good land, enriched with manure a year or two previous. The clover seed is a little uncertain on account of the weather. On land as rich, and clear, and mellow, and deep as it should be, drought would seldom be injurious, but in a wet season the growth might be so great that the heads would not fill well. But in this case there would be a splendid second crop of hay, with seed enough in it to much more than pay for thrashing. A good cow, with liberal feeding in winter and summer, will make from 500 to 600 lbs. of cheese in the season, worth now from 17c. to 18c. per lb.—say \$85 to \$108 per cow, so that the above estimate of \$80 is moderate. If we may judge from past experience it is safe to estimate that a good sheep, costing, say \$4.00 in the fall, will be worth, if well fattened, at least \$9.00 in the spring. And in fact, at current rates, the food will cost \$5.00 a head. All the above estimates, therefore, are quite within the bounds of probability. And it is equally sure that a farm once capable of producing such crops can be maintained at this high state of fertility. There will be consumed on the farm, say:

100 Tons Wheat straw.	50 Tons Oil-cake.
100 Tons Barley straw.	90 Tons Corn meal (3,200 bushels).
80 Tons Corn stalks.	
100 Tons Clover hay.	
60 Tons Clover seed hay.	640 Tons.

This would make from 1,500 to 2,000 loads of good manure, which in connection with \$2,500

worth of guano, bones, or other fertilizers, would keep up (and in fact, greatly increase) the fertility of the land—especially of the pastures.

This is what may be. Let us look at what is. Here is a naturally good, but somewhat run-down, farm of 400 acres, on which "me and my boys, with two hired men and a couple of extra hands in harvest, do all the work." There are:

40 acres of Wheat,	12 bush. per acre.	@ \$2.10	\$1,080
20 " Oats,	40 "	@ .75	150
20 " Barley,	30 "	@ \$1.50	450
25 " Corn,	40 "	@ \$1.00	250
10 " Potatoes,	80 "	@ \$1.00	800
20 " Buckwheat,	15 "	@ .90	180
14 Cows,	100 lbs. @ 25c.		350
11 Calves sold to the butcher	@ \$7.		98
10 Hens,	300 lbs. @ 10c.		300
300 Sheep, shearing 4 lbs. wool	@ 55c.		165
40 Lambs sold to the butcher	@ \$2.50		100
50 Acres hay, 15 cwt. per acre.	@ \$15 per ton		500
40 Acres Clover hay, 1 ton per acre.	@ \$10		400
40 Acres Clover seed, 1 bush. per acre.	@ 8.		320
3 Acres apples and cider.			600

Expenses.			\$7,035
" Me and two boys," say.....	\$ 750.00		
2 Men, 8 months and board.....	600.00		
Extra help, thrashing, etc.....	400.00		
Half of the hay, corn, and oats, fed to horses, pigs, etc., on the farm.....	1,335.00		
Incidental expenses, repairs, etc.....	1,500.00		
Seed, 80 bushels Wheat @ \$2.10.....	168.00		
50 bushels Oats, @ 55c.....	27.50		
40 bushels Barley, @ \$1.50.....	60.00		
100 bushels Potatoes, @ \$1.00.....	100.00		
7 bushels Corn, @ \$1.00.....	7.00		
10 bushels Buckwheat, @ 90c.....	9.00		
10 bushels Clover, @ \$8.00.....	80.00		
10 bushels Timothy, @ \$3.00.....	30.00		
			\$1,971.50
Profit.....			\$2,654.50

This is apparently quite a respectable profit, but the farm is getting worse and worse every year. Land in the neighborhood is worth \$150 an acre, naturally no better than this. This farm would be dear at \$100, and if "me and my boys" continue to sell the hay and let what little manure there is made run to waste, how long will it be before it is worth less than \$75? This man thinks I am ruining myself because I spend nearly \$8.00 an acre every year on my farm for labor, and perhaps I am; but my land is getting that much better every year, and his is getting that much worse. It is desirable to get along with as little manual labor as possible, but it certainly will not pay to neglect the land and let the weeds get full possession, as they now threaten to do on many farms. Let us drain the land, cultivate it thoroughly, make plenty of rich manure, and farming will pay. If we cannot do this on a large farm, let us sell and buy a smaller one, until we have the capital required to manage the farm to the best advantage.

One of our nurserymen sent a man to Michigan to buy sheep to fatten this winter. He bought 400 good wethers, three and four year-old, that average about 95 lbs. each, at a cost here of \$3.10. His object is to make manure. He gets about a load of manure to a sheep, worth \$4.00 or \$5.00. He has adopted this plan three or four years, and his land already shows the effect. He thinks it far better manure than that which he draws from the city. I told him if he would use oil-cake instead of corn the manure would be richer still. There will be a great many damaged beans this year, which, if not mouldy, can be fed to sheep with advantage. And the manure from beans or peas is nearly as rich as that from oil-cake.

We have not had such bad weather for harvesting beans for four years. I have usually pulled the beans and placed them in small heaps on the ground, and if we have dry weather, this answers very well. I did so this year, and the day after we finished pulling, it commenced to rain, and rained more or less nearly every day for a week. We turned the beans as often as possible, but many of them moulded and rotted, and not a few sprouted. Had I

adopted the plan recommended in the September *Agriculturist*, it would have been a hundred dollars in my pocket. Some of my neighbors did so, and the beans kept perfectly safe. Mine will have to be hand-picked, at an expense, say of 25 cents per bushel, or \$5.00 an acre. Two dollars an acre would have covered the whole expense of stacking them, and I should have saved all the fodder, which is now worthless.

Deep and Shallow Culture.

There are many soils in the world which yield fairly remunerative crops, for an indefinite number of years, (say 99), without manure of any kind, and with only a modicum of tillage. The reason is found in the fact that these soils decompose very uniformly, by the action of plows, harrows, and weather, combined, and so furnish just about as much plant-food each year as the crops require. Some of the Black Sea wheat lands are said to be of this character. Here wheat has been raised for hundreds of years without manure; the yield is very uniform and remunerative, though small. All tolerable soils contain in great abundance all the ingredients requisite to make good crops of grain, but they are not all available. By tillage, by mixing decomposing substances with the soil, and by exposing it to the action of the weather, sunlight, heat, dryness, freezing, and moisture, combine to influence the decomposition and disintegration of all parts of the soil. Some soils are much more susceptible to these influences than others, and so require less tillage and less manure to produce the effects seen in other soils. The more thoroughly and the deeper the soil is stirred and exposed to the action of the weather and of manure, the more available plant-food will be annually produced from its disintegration. Manure, besides, supplies any deficiency which may exist, and enables us to obtain much more nearly maximum crops. Were the supply of ammonia which is obtained from the air abundant, a sufficient amount of ash-ingredients could be obtained from almost any fair soil, by a sufficient amount of cultivation. The problem for the farmer is, what amount of tillage he can profitably apply for any series of crops.

Tillage is really of two kinds, deep tillage and surface culture. As a rule, the deeper the soil is stirred, the more will it be exposed to the action of the elements, and the more plant-food will be formed. In poor soils this is diffused through great masses, and for this reason available to but few plants. For such as feed near the surface, (wheat, for instance), surface cultivation and manuring are usually imperative.

Very fair plowing is six inches deep, which is deep enough to plow for small grains. In plowing for other crops, if manure is abundant, or the soil rich, the soil may be gradually deepened until we reach the ordinary limit of plowing—about 10 inches. We go below this with the subsoil plow, and simply loosen and let the air into the soil below, when it is plowed, which is an exceedingly beneficial operation, and equally advantageous upon shallow and deep-plowed land. Where deep, thorough drainage is practised, which virtually extends some of the effects sought by tillage (namely, exposure of the soil to the action of the air) to a depth of several feet, the plants quickly respond. The effects of tillage, however, go on most rapidly on the surface, and here it is that it is desirable to do the most work. For surface culture we have the harrow, in all its varieties, adapted to pulverizing and stirring the ground

to a depth of about three inches. In this country our assortment of scarifiers is small, but in Great Britain and upon the Continent, many different kinds are used, under the name of cultivators, scarifiers, clod crushers, harrows, etc., which are used in bare fields. The variety of surface workers, (horse-hoes, cultivators, etc.) to be used among the growing crops, is well-nigh endless. These obviously serve a double purpose, and not only stir the soil, but kill weeds and give fresh earth to the plants, to some extent.

Deep and shallow tillage are not incompatible on the same land. In fact, the only really thorough culture consists of both; and where the soil is in a fair state of fertility, and will bear good crops of clover or corn, the system followed should always be *deep breaking* and *shallow after tillage*, with surface manuring when small grains and grass form part of the rotation.

Experiments in Wheat Culture.—Drilling, and Horse-Hoeing.

The Secretary of the Goodline Farmers' Club, of Minnesota, communicates to the *American Agriculturist* the following interesting statement in regard to some experiments in wheat culture made by one of the members of the Club.

Field No. 1.—Two bushels to the acre was sown with the broadcast sower and cultivator combined, and the seed was planted at all depths from the surface, to 3 or 4 inches deep.

Field No. 2.—Was sown with a common wheat drill, east and west, one and a quarter bushels being used to the acre, planted about 2½ inches deep.

Field No. 3.—Three pecks of seed were drilled in, east and west, 2½ inches deep, and 18 inches apart. It was cultivated but once when about a foot high, with a 5-toothed walking cultivator, at an expense of \$1 per acre.

The results are thus stated: "No. 1 was good wheat, not damaged by heat, head medium in length, well filled, stood thick upon the ground. Was unequal, some straws 5 and 6 feet in length, and some only 2 feet. Some heads were very green while others were ripe. The yield is estimated at from 20 to 25 bushels per acre. No. 2 was of a better color during growth than No. 1. Very even in straw and degree of ripeness. Heads about even, of extra length. Bunches very heavy, and the yield is estimated at 30 bushels per acre. No. 3 was extra at all times. Its unusual deep green color and broad leaves attracted much attention. No one supposed it the same kind of grain as lots 1 and 2. It stood out much more than either Nos. 1 or 2. It was uniform in length of straw and degree of ripeness. The heads would average one-third larger than No. 1, and the largest and heaviest wheat we ever saw. Strangers here picked for the smallest heads, and then shelled from 60 to 80 kernels from each head. Our binders (and we had some from other States who had had much experience), said they never saw such large heads or such heavy wheat of this kind, namely, China Tea. The yield is estimated at 35 or 40 bushels per acre."

The Club arrives at the conclusion that they have been in the habit of using too much seed for spring wheat; that wheat needs cultivating; that if half a bushel of seed were used per acre, and sowed in drills 15 inches apart, and thoroughly cultivated, the average crop of Wisconsin might be doubled. They recommend, moreover, the expenditure of the price of the seed saved in giving the land a more thorough harrowing. In this they are wise; there is nothing

to which wheat so quickly responds as thorough tillage, and it may be a question whether this should be done previous to sowing or after the grain is up. There are other interesting subjects for investigation before any one can speak with authority. The exact amount of seed per acre, though depending in a measure upon the kind of wheat and the character of the soil, may be nearly approximated. The distance apart of the drills is another subject for experiment; 20 inches has been recommended. It is difficult to cultivate between those which are much nearer, and no doubt the roots will fill the ground between them at this distance.

Shelter for Manure.

The difference in value between sheltered and unsheltered manure is sometimes immense, and

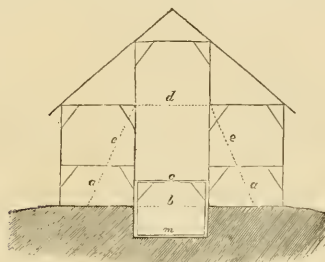


Fig. 1.—DIAGRAM SHOWING MANURE PIT.

sometimes not very great. That which is suffered to become dry, very rapidly deteriorates, while that which is constantly moist or wet, (yet is never washed), and frequently receiving additions upon its surface, loses but a little, if any, part of its value. It is, in fact, under cover. Still, there is always a surface portion liable to become dry after fermentation and decay have taken place and ammonia is formed, in which case it would deteriorate. It is not alone to preserve animal manure that agriculturists advise that it be kept in cellars or under cover in some way. It rots faster, its decay is more easily regulated, and it is more easily composted and mixed with vegetable matter, and the fermentation which it induces in the mass is much more uniform. Besides, it becomes the breeding place and food of fewer maggots, etc.

Old-fashioned barns all over the country may be seen disfigured by the dark (or light) stains of the regular winter dung heaps, which, year after year, have accumulated under the windows

of the *Agriculturist*, and we are frequently inquired of how they may be conveniently modified, and how the manure may be kept to best advantage outside of them. We suggest three ways. The barn may be raised 2 to 6 feet, and a cellar dug beneath, which would require the moving of 2 to 5 feet of earth to give a cellar 7 feet high in the clear, which is low enough.

To illustrate another way we have introduced a diagram, fig. 1, representing the cross section of an old-fashioned barn with cattle stables (*a a*) on each side of the floor. The floor is taken away; its place is indicated by the dotted line, *b*. A new floor (*c*) is placed some 5 feet above the old one, new posts being set, if necessary, to support the timbers. Under the floor a pit (*m*) is dug for manure. The cattle are faced to the outside and foddered from the floor above. A raised approach is made for reaching the thrashing floor, and under it, or at the opposite end of the barn, is a passage gradually sloping to the bottom of the manure pit. The raising of the barn floor may necessitate the removal of the cross beams (*d*) above, and if this be done it may be desirable to brace the center posts in some way, as indicated by the dotted lines at *e, e*.

Another, and the cheapest, and yet an efficient way is to build lean-to sheds along the sides of the barn, over a manure pit. This is shown in figs. 2 and 3. The old stains are seen on the sides of the building under the windows. The pit is 4 feet deep, 12 feet wide, and as long as the barn. A slanting passage-way for carts in and out, to save high pitching, is provided at one end. The pit walls are laid in cement, and the bottom is a substantial grouting of stones and cement. In the middle near the outside a hole is made about three feet wide, by two deep, which is cemented also, and covered with a stone. The floor slopes toward this, and if there is water anywhere it will find its way here, and may be



Fig. 3.—SECTION OF MANURE PIT.

pumped up and spread upon the heap. The sides of the shed may be boarded down to prevent snow and rain falling in, but it is usually the case that a moderate supply of water from within is needed, and must be added in some way.

Winter Care of Fowls.

Poultry keeping is one of the most fascinating of all employments to one who will devote his best thoughts to the business, and really love his fowls, and geese, and ducks, and whatever else his yards may have. All varieties of barn-door fowls are more or less tender; they freeze their combs and feet, and if not in sound health, often freeze to death. In severe weather all their natural forces are directed towards keeping warm; growth ceases, egg laying and fattening cease, and of course the profit of keeping hens ceases also, so long as severe weather lasts, if we do not give sufficient protection. Good poultry houses have been repeatedly described in the *American Agriculturist*, and double walls filled with sawdust or tanbark, great greenhouse windows on the south or south-east side, arrangements for ventilation, and several of the most desirable appointments, as nest boxes, water fountains, roosts, etc., recommended.

As winter comes on, we ought to be beforehand in preparing comfortable winter quarters for our fowls. The old houses, if, as is usually

the case, they are only frames boarded on the outside, should be lathed and plastered, or lined with matched boards, and the spaces filled with planing-mill shavings, sawdust, swamp hay, or some similar substance. The floor should be covered with several inches of dry sand, and

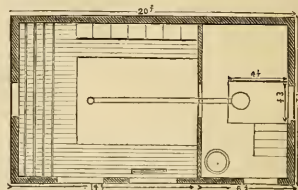


Fig. 1.—PLAN OF FOWL-HOUSE.

the ventilating holes near the roof should be partly stopped, or shutters arranged so as to close most of them in very cold weather. Nothing is more important to the health of fowls than pure air. Birds breathe with great rapidity, and maintain a corresponding degree of heat in their bodies; hence they vitiate great quantities of air. It frequently happens when persons suppose they have taken the best possible care of their fowls, but have neglected ventilation, that fine birds are found dead under the perches, when no cause can be assigned. The fowls on the upper perches become oppressed with the carbonic acid in the air, finally lose consciousness, and as soon as the muscles relax, they drop from their roosts in this condition, and are frequently stone dead or too far gone to recover. On this account it is well to have all the roosts rather low. For very heavy fowls, like Brahmas or Cochins, they should not be over 3 feet high. The feet of fowls never freeze when they roost on broad perches, for then the feathers of the body cover the feet completely.

Fires in poultry houses are not so absurd as they may appear at first thought. When eggs are 5 or 6 cents apiece, it will pay to take some pains to have plenty. They may usually be secured by having the hens in warm quarters, but in unheated houses three or four very cold days and nights will so chill the fowls that but few if any more eggs will be laid for a week or two. This may be entirely obviated by having a stove in the chicken house, in which fire is made on very cold nights. Fig. 1 is the ground plan of a fowl house, in size 20 x 12 feet, divided by a lattice work partition into two rooms, 12 x 14 and 6 x 12 feet. The plan supposes two large windows on the south, roosts on the east, a feeding floor under the windows, and nest boxes on the north side. The little room is for entrance, store-room, fire-room, and hatching

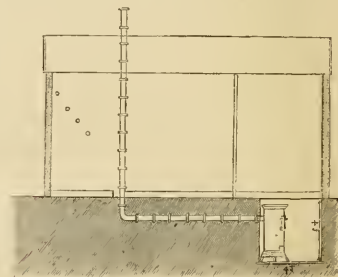


Fig. 2.—SECTION OF FOWL-HOUSE.

apartment for very early chickens. A pit to contain a small stove is dug 3 x 4 x 4 feet, and entered by three steps. The pipe is of common glazed drain tiles, and passes underground

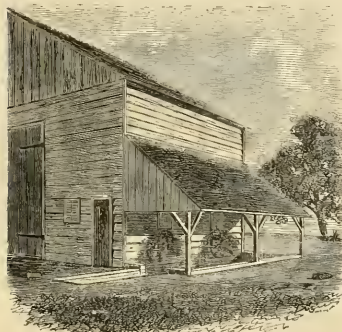


Fig. 2.—LEAN-TO MANURE PIT.

of both cattle and horse stables. No doubt thousands of such barns are owned by readers

nearly to the floor beneath the roosts, and then up, as shown in fig. 2. This pipe is covered with about a foot of dry sand, and the warmth is diffused into the sand on all sides. It is important that there should be no moisture in the soil or sand which forms the floor of the house, and it would be well to cement the floor and the trench in which the pipe is laid. But, though the ground around the sides of the house may freeze, and so be made moist and muddy by an underground fire, yet we are confident such an arrangement of floors as we have indicated would prevent any difficulty from this source. The object of placing the stove underground is to have a diffused warmth, lasting long after the fire goes out. We have repeatedly made use of underground fires and flues, but not for this purpose, yet recommend them with confidence. A mass of moderately heated sand remains warm a very long time, and diffuses a mild and agreeable warmth. The same end may be accomplished by a brick stove, or any stove enclosed in a double wall and arch of bricks.

Growing Interest in Blooded Stock.

Hardly any thing can rejoice the intelligent agriculturist more than evidence that the farmers are taking increasing interest in raising pure and grade stock. We have often said, and say now again, that no sensible farmer, if he can help it, will use a grade, or mongrel bull, as a sire for stock he expects to raise. The use of thoroughbred bulls pays, even if the calves be slaughtered for veal; and it is a hundred times more important if they are to be raised. The question is asked us very often, "What sort of a blood bull ought I to buy?" We only help each man to decide this question for himself.

Short-horns are preëminently a beef race; still, among the cows, large milkers are frequently found. The grades usually make deep milkers, but the milk is generally not rich. They require good feeding all the time, and when fed for market, feed very economically. They reach maturity earlier than any other breed.

The Devons are very different. They are an ancient race, and though somewhat improved in beef points, have changed little in the historic period. They are red, with long, white horns, beautiful heads, short limbs, long bodies, and straight backs. They will pick up a good living on rough pastures, in the woods, or cane-brakes, where *Short-horns* would almost starve. They give good milk, which is lacking chiefly in water (and this may be added, if desired). The calves are small; the bulls reach maturity and full size at 5 or 6 years of age, and the cows and steers at 4 or 5, perhaps. As working cattle, *Devons* and *Devon* grades are unsurpassed, on account, chiefly, of their compact, muscular frames, intelligence, and sprightliness.

The Ayrshires are the cattle for milk and cheese dairies. See article on another page.

The Jerseys, or Alderneys, are noted for their very yellow milk, cream, and butter, as we have stated in several recent numbers of the *Agriculturist*. The oxen of neither of these breeds are worth much, but both make superior beef.

These hints will serve as a guide to those of our readers who may wish to select a premium from our live stock list. The *Devons* do well at the South, *Short-horns* do not, as a general rule at least, and we do not know whether *Ayrshires* and *Jerseys* have done well or not. At the North, the last two are reputed to be very hardy, and the same is true of the *Devons*.

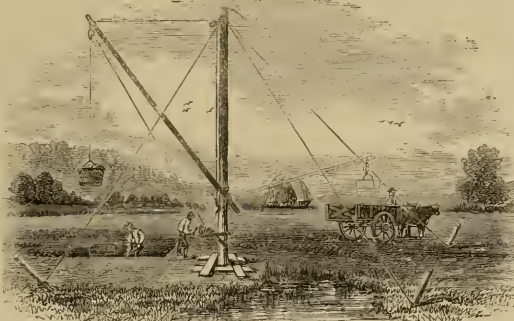


Fig. 1.—GETTING OUT MUCK WITH A CRANE.

Getting Out Muck.

Most muck-swamps, or peat-bogs, are accessible in winter, and the common practice is, first to dig ditches that will carry off the bulk of the water down to the lowest possible level; then to throw out the muck upon the surface, and cart it off in winter, when all is frozen hard.

As we go South, however, and in tide-water swamps, the reliance to be placed on a frozen surface diminishes, and it is likely to prove a pit-fall and a snare. A "Sunny South" correspondent, who is in straits, sends a sketch of a crane and scoop, with which he proposes to scoop out muck by horse power, where the team will have no footing. Such a plan will not work, but a horse or ox scoop may be easily employed in the following manner: Provide a strong rope, with two simple pulley-blocks. (The rope must be more than four times as long as from where the muck is to be dug to solid ground.) One pulley is fastened upon the firm ground, and the other to a rail or other anchorage in the muck-bed, just half as far from the first pulley as the rope is long. The rope is rove through both pulley-blocks, and a common ox-scoop, or scoop-shovel, is made fast to it, both ends being attached to the bail. Now, if a horse or pair of cattle be attached to any part of this rope, and pull on the line of it, the



Fig. 3.—BUCKET.

scoop will be moved forward or backward. If the team start off when the shovel is loaded, and at the farthest point from solid ground, and walk towards the pulley on shore, by the time it is reached the scoop should have reached the land, where the muck may be dumped; and the team, being faced about, will draw the scoop back to the starting point. If the swamp be a narrow one, two teams, attached to the end of a straight rope, alternately pulling and returning, may be made to move a scoop back and forth in the same way, the scoop taking a load from the middle of the swamp, each way, to the shore. We have never seen this done, but it is obviously

quite as practicable as the method with two pulleys, which is sometimes employed in getting out harbor mud, at low water along the coast.

A simple home-made crane for getting out muck, if the distance to firm ground is not over about 50 feet, and equally good, or better, for other purposes, is shown in the engraving, fig. 1. This consists of an upright pole, or mast, say about a foot in diameter, and 25 feet long, pointed, and "stepped" in timber resting upon planks, so that it may have a firm base even on the soft muck, and held in position by three guy ropes. Attached to this is a second pole, or spar, 6 or 8 inches in diameter, and nearly as long. One end of this is made fast to the mast by a simple sling, shown in fig. 2, and the other end is supported at the desired elevation by a rope passing from it to a pulley-block at the top of the mast and down to a belaying block. A bucket, made of half an oil cask, or larger cask, with a bail attached in the manner shown in fig. 3, or in some similar way, is attached to a rope which passes through a block in the upper end of the spar and down its length to the windlass or spool attached to the mast. The bucket is filled by hand, swung round by means of a rope attached to it, or to the crane, and managed by the driver of the team, and its contents dumped into a cart, or, it may be, in a heap. The use of this crane, in a nearly horizontal position, is shown in fig. 1, by phantom lines. The extreme reach of the crane is something more than its simple sweep. The simpler methods of direct carting, scooping, or moving out by means of wheelbarrows run upon a plank track, bridging brooks, etc., are much more inexpensive and are preferable, when they can be employed.



Fig. 2.

Tim Bunker on Farmers Getting Rich.

MR. EDITOR.—That Ohio man's letter you sent me touches on a point that a good many folks are thinking about, and I may as well give your big family the benefit of our Hookertown experience. It is fair to let him state the case in his own language. He says: "You had an article last month on the American disease of 'muckness of land,' in which you forgot to mention how those European's live who support their families, and get rich on 5 acres of land. We want to know how as we are very anxious to get rich, and not willing to wait if we can do better. Are their tables loaded with sweetmeats? Do they ride in a splendid carriage with a spotted dog under it, and all the necessary accompaniments of pumpkin seed bonnets and kamel hair shoris, &c.? Have they parlors with costly carpets and furniture, with the company to correspond? Do they drink tea, eat tobacco, and buy out of the grocery the prencipal part of their living? Please to explain the whole thing, and not give us a part of the truth only. This subject of economy is fearfully overlooked, and if you fear your popularity would be compromised by so unpopular a subject, please hand it over to Tim Bunker. I think he will not shrink from the task."

I am often called upon for advice by my neighbors besides what I give in Justice's Court, but it is rather new to have a man from so far out West wanting to know my views. So I had

to take this case to the Farmers' Club, where we get all the Hookertown wisdom boiled down. The topic for discussion, as printed in the Gazette, was, "How can farmers get forehanded?" It called out a full meeting. Deacon Smith, who is about the richest man we have in Hookertown, said the cultivation of special crops was one of the best ways he knew of to make money. "I did not get ahead much as long as I undertook to raise a little of every thing. But when I gave the most of my attention to fruit growing, I found it paid, and I have kept cultivating more and more that which paid best. I always mean to raise what I want for my family on the farm, as far as I can, and then put all the rest of my force upon raising some one thing that will bring in money in a pile. It pays me a great deal better to raise 4 acres of strawberries and get \$2,000 for them clear, than it does to run over 100 acres of land, and get the same amount of money in a dozen different crops."

Jake Frink said: "I hain't got any clear notions on this subject. I've been trying to get forehanded this thirty years, and could never bring it about. I started in debt, and I never could get out. Sometimes the folks have been sick, and doctors' bills eat up all the profits, and sometimes the cattle disease was ragin', and then there want any profits to eat up. Now if any boddy can tell a feller how to git ahead I should like to be a scholar and learn."

Seth Twiggs said he had noticed "that a drinking disease kept a good many folks behindhand. As long as a man has a crook in his elbow he is sartin' to have crooks in other places and he won't see to go straight any where."

George Washington Tucker said: "That sounded a good deal like twitting on facts. I admit I take a drink occasionally with a friend, but as long as I pay for it, I don't see as it's any body's business. The trouble with me is I never could get any land of my own to work. I have always been helping raise other folks' corn and potatoes. A man must have land if he is gwine to git ahead any. As long as rich folks buy up all the land, there ain't any chance for the poor. They talk about ten acres enough. If I could git one acre and a house on to it, I should be as rich as a prince."

So you see, Mr. Editor, Hookertown is not a unit on the way to get rich. Every man has his theory, except Jake Frink, who is all in a muddle, like a good many other people who own much land and don't work it. The secret of getting rich, I take it, all lies in a nutshell; "Spend less than you earn." A man who sees to it that he does that, at the end of every week, month, and year, will be sure to get ahead. It was on this principle that Sally and I begun housekeeping, and every year has seen a little progress, until we have got things fixed up pretty much to suit us. By a fixed habit, we live within our means, and this makes a rich man in Hookertown, or in your city, no matter what his bank account is. We didn't have any carpets on the floors, at first, because I thought the land wanted a carpet of manure a great deal the most. We had sheep, and it wa'n't long before Sally managed to weave a rag carpet, and she didn't have to pay out money for any thing but the dye stuff. By the time this was worn out the money that I kept laying out on the land begun to come back so fast that we could have a Brussels carpet in the parlor without running in debt for it. It was rather a proud day when that roll of carpeting was brought into the house. Sally had waited for it a dozen years, and every thread of it came out of her own

bones, as much as if she had spun and wove it all herself. "Every thing that comes into the house must be marked paid" was the motto she started with, and she has stuck to it like a true woman ever since. If a man begins farming with a small capital he must go upon this principle in his housekeeping. All he can afford to run in debt for is his stock in trade, tools, manure, seed, and animals. These pay a big interest, while millinery and furniture, pianos and bronze clocks, cost considerable to keep them agoing. The Europeans of whom that Western man speaks, adopt this principle, if they thrive. The average Irishman or German comes over here with very little money, and no credit. Almost his whole capital is in his person. He works a few years, and saves his money. When he has a few hundred dollars ahead he buys a few acres in the outskirts of the village, puts up a small, plain house, marries a prudent woman, and goes to housekeeping. She does not indulge in carpets, or pumpkin seed bonnets and things to match, but she works as steadily as her husband, and pays her way. She is ready for any kind of woman's work, and is not afraid to use the hoe and spade in the garden. She almost supports the family herself, with her washing, her eggs and milk, and garden truck, while Patrick saves his dollars and invests in more cows, a horse and cart, and more land. In a few years he is done with working other folks' land, and hires men to work his own. He is a tidy farmer, his house and barns are enlarged, his stock increased, his children are well educated and well dressed, and they smell so strong of Plymouth Rock that the old Hookertown families intermarry with them. Now, what is there in an average Yankee that he should not pursue the same course, and pay for what he enjoys in his home before he comes into possession? If he can have a carpet without taking another man's money to pay for it, let him have it. But if he cannot afford it, bare floors will not hurt honest men's feet. Let him keep a carriage if he can afford it, but if he cannot, then drive the box wagon to mill and to meeting. The grist and the sermon will digest just as well. His pride may suffer a little, but his credit won't. "Pay as you go" was the good old maxim of our fathers, and by it they bought and paid for their homes. It would be better if more of their sons and daughters walked in their footsteps. No! my Ohio friend, there is no short, easy road to riches for common folks. You can't do any better than to work right on, and wait for the millinery you can't pay for to-day. You might run in debt for pumpkin seed if you cannot get them in any other way. But the pumpkin seed bonnet will ruin you if you agree to pay for it to-morrow.

Yours to command,

TIMOTHY BUNKER, ESQ.,

Hookertown, Conn., Sept. 15, 1868.

Carting Out Manure in the Fall.

Our springs are often so wet that the planting season is crowded into a very few days, and it greatly helps the hurried labors of seed sowing to have the manure upon the ground. Some of our best farmers cart out the most of their summer-made manure in the fall and early winter, and if the heaps are properly protected the value of the manure will be increased. The advantage of making manure under cover is not that it is kept from moisture, but that the degree of moisture can be regulated, there being neither too much nor too little in any part of the mass.

The compost heap needs water to regulate its fermentation. If it can be so constructed that it will receive just water enough, and so that the surface will not dry, nothing will be lost. The heaps should have six or eight cords of manure each, should be made four or five feet high, well trodden down, with sides sloping at an angle of 45 degrees, to shed a part of the rain, and both top and sides should be covered with a few inches of surface soil or muck. The fermentation will go on through the winter, and when the compost is forked over in the spring previous to spreading, as it should be, it will be found very "short," and better than if it had lain in the open yard all winter. Most farmers have not room enough in their cellars and yards to store all the manure their stock is capable of making, and it is a great advantage to clean out all their accumulations in autumn, as well as spring, and furnish a new supply of muck, loam, or straw, for the winter. A much larger quantity of manure is made by this course. If concentrated manures are used in addition to those made upon the place, they may often be mixed with the yard manure in these compost heaps with good results. The danger of burning the seed, which so often occurs when these artificial manures are applied in the hill in the undiluted state, would be avoided, and if the combined manure be used for spring grain a more even distribution is effected.

In a Bog.—An Agricultural Problem.

Our friend, Titus Oaks, Esq., of Westchester County, occasionally comes in with an agricultural problem, which he thinks will puzzle editors and others. There is a twinkle in his eye, as he half exultingly asks what he'd better do. This is his last statement:

"I am in a bog. Will you help me out? Eight years ago, I bought a piece of land, in the centre of which was a bog-swamp of about 4 acres, with springy land around it. We cut a ditch through it, 14 feet wide, throwing the muck on each side; then cut ditches four feet wide by four feet deep, at right angles, once in four rods. After carting off the muck, the bogs were cut off with sharp spades. We carted on common earth, and a little stable manure, and sowed with Timothy, clover, and red-top. The first year after, we had a fair crop of very good hay. The next, the grass was extra good, the Timothy, in some places, being 5 feet high. I mowed it two or three times a year, and kept the cattle off for five years; but the water grasses gained on the upland grass, starting sooner in the spring and growing later in the fall. For the last three years I have mowed it but once a year, and have turned my cows in to eat the after-growth. Now it is one-half reeds and rushes. The muck was from 3 to 6 feet deep; it has settled 1½ to 2 feet. The muck is more compact, and the water does not drain through, as at first. Tile-draining does well around the swamp, in the gravelly land, but not in the muck, except directly over the drain."

We have here a soft, pasty peat, which is made more and more compact the more water it loses. It is clear no half-way treatment will answer. The drains were deep; they are now 1½ to 2 feet shallower than at first. If, by very deep plowing, sand or upland soil could be mingled with the upper foot of soil, it would not cure the difficulty, though it would help matters. If new drains, 4 feet deep, were dug half way between the others, the relief would only be very local. Paring and burning the

surface might help a little, but not much; besides, the surface was covered with a dressing of common earth, which might interfere with burning. Subsoiling would help a little also, but the trouble is deeper seated than any subsoil plow will run. If tile-drains will not work, we would advise brush drains, of no less depth than the main drains were originally, and that the old drains should be deepened; then, with more earth liberally put on, deep plowing and subsoiling, we think we might almost warrant good crops of corn and grass for five years more. Open drains, for some reason, never do so effective work as covered ones—probably because the sides dry and become partly impervious to water. It would be better to lay tile-drains, two rods apart, (laying the tiles on strips of board would secure a true grade and stability), and it is a matter to be looked closely into whether it would not pay to lay a tile-drain all around the swamp, to keep the water of rains and springs from flowing into the low ground. By all means stop grazing, for the tramping of cattle makes the soil compact, and is one source of the increased difficulty of drainage noticed in our correspondent's statement. We have never had to deal with just such a piece of ground, and if any of our readers have, their experience would doubtless be of value to Squire Oaks, as well as many other readers of the *American Agriculturist*.

Accurate Knowledge on the Farm.

In a recent talk with Squire Oldschool, he advocated the stacking of hay and the winter feeding of cattle at the stack-yard,—two heresies that we have always opposed. His idea was, that it saved labor in storing the hay, in foddering, and in spreading the manure. Had he ever tried any experiments to ascertain how much the hay wasted in value by exposure in the stack, how much more it took to support an animal unsheltered, and how much of the manure dropped around the yard was wasted? He confessed his ignorance on all these points, but thought his animals came out about as well in the spring as any of his neighbors', who put everything in the barn, and he was quite sure he saved one-half the labor. Now these, and a great many other disputed points in husbandry can be definitely settled by the scales. Weigh four bullocks on the 1st of December, and feed them at the stack sixty days, weighing the hay they consume and the animals at the close of the trial. Put four others in a good barn, well ventilated, and give them the same daily allowance of hay, and water at the barn temperature, and weigh them at the close of the same period. The amount of flesh gained in the two cases would be a pretty good indication of the respective value of the two practices. If two pounds of hay in the barn made as much flesh as three pounds out of it, the advantage of shelter would be clearly indicated. If, on the other hand, the out-door feeding showed the better results, that would be a good reason for the continuance of the old, and, we may add, the still prevailing practice. Feed equal quantities of stack hay and barn-cured hay to the same animals, for the same periods, and ascertain the flesh made in the two cases, and you will have some reliable basis for an opinion of the respective values of hay cured by the two processes. The manure of the four animals fed at the stack might be confined to a half acre, and that made in the barn, from the other bullocks, using the same amount of fodder, might be spread upon

another half acre of land, in equally good condition. If the sheltered manure showed crops twice as large, we should gain some definite knowledge of the waste of manures at the stack-yard. These experiments, of course, involve some painstaking and expense, but, if fairly made, they would determine something, and lead to better husbandry. They would prove a much better investment than more land, or more railroad stock. We want more accurate knowledge, ascertained from careful experiments. This kind of knowledge—the personal experience of practical men—we are most anxious to secure and spread before our readers. The doctrine is certainly true, and has been demonstrated again and again. That which convinces our substantial, old-school farmers, is what they can prove for themselves.

Make More Butter.

Butter is very high, and it is desirable to increase the supply of an article in such general use.

There is but one way of doing this. We cannot increase the number of cows so as to meet the demand this fall and winter, but we can by liberal feeding enable the cows that we have to give more milk, or at least we can get milk containing from one-third to one-half more butter. That liberal feeding will do this there can be no question. What extra food to give depends on circumstances. The quality of the grass at this season is apt to deteriorate, and even when there is an abundance of it, a little richer food can be given to the cows with great advantage. When grass is short, there is still greater necessity for, and advantage in, providing extra food. In many sections there is much corn imperfectly cared, and there can be no better way of disposing of it than to feed it out, stalks and all, to milk cows. This will save husking. If well cured and put in small stacks, or in a barn, with layers of straw between the corn, very few of the soft ears will mould. A liberal supply of such fodder will keep up the flow of milk until Christmas, and if the cows are provided with warm stables, butter may be made nearly all winter.

When there is no fodder of this kind on the farm, feed ordinary corn stalks, or hay and straw, with a liberal allowance of some kind of grain or oil-cake. Probably corn meal is the cheapest food that can be used, and so far as the writer's experience extends, he has never found any trouble in using it. Four quarts a day to each cow have been used with great advantage, and at the present price of butter such feeding is quite profitable. Some dairymen prefer to feed half corn meal and half bran. When peas can be obtained at about the same price as corn, a mixture of equal parts of corn and pea-meal is perhaps the very best food that can be given to a cow. If wheat bran was cheap, say but a little higher than hay, we would feed that also.

But our object is not so much to say which is the best grain to feed milk cows, as to urge farmers to feed grain of some kind. It does not so much matter what,—only give the cows a liberal supply of food, and they will return a liberal supply of butter. The kind of grain and the way of feeding is left to the judgment and good sense of the readers. When it is convenient it is better to "slop" the cows, but if not convenient the fodder may be chaffed and moistened with water, and a due proportion of meal mixed with it, care being taken that the mangers are so constructed as to avoid waste. With a good supply of food, regularity in feeding, comfortable stables cleaned out daily, prop-

er ventilation, and water easily accessible, there is no trouble in doubling the ordinary quantity of butter from now until mid-winter or later.

Wood Ashes as a Fertilizer.

This is one of the most valuable fertilizers within reach of the farmer. The unleached article has the more potash, but the leached is thought to be quite as valuable. In leaching they shrink a good deal, and lime is usually added, which increases their value. They are generally sold, too, at a less price. Ashes are well suited to all farm crops, and are very beneficial in the fruit yard and orchard. Most farmers still sell wood in the cities and villages, and rather than go home empty, they should carry back ashes and other fertilizers, to replace the potash, lime, and phosphoric acid that have been carried off in the crops and animals sold. Ashes show immediate effects from their application, and at the same time last long in the soil. They are very highly appreciated in the onion growing districts, but may be applied with equal advantage to ordinary farm crops. They should be kept as near the surface as possible, spread and harrowed into the seed bed, or applied directly to the growing crops. Make a business of saving, buying, and storing ashes during the winter for the next season's operations.

A Defect in the Pennsylvania Rotation.

The presence of daisies, flea bane, and other weeds so generally visible in the districts where the Pennsylvania rotation prevails, leads us to doubt its perfection. This system embraces, 1st, corn upon a limed sod; 2d, oats or fallow; 3d, wheat upon well manured stubble or fallow; 4th, clover; 5th, Timothy, one or two years. The system is, on the whole, an excellent one, and the fact that it is so generally adopted, and keeps up the fertility of the soil, is the best testimony we could have to its utility. But the result is weeds, very largely mixed with the clover and Timothy, damaging their quality and frequently rendering the clover and hay seed from these districts a very bad bargain to the purchaser, at any price. The rotation, it will be seen, provides for but one hoed crop, and the cultivation of this is almost exclusively by horse-power. Frequently the rows run but one way, and the cultivator fails to cover or destroy the weeds that grow between the corn. They mature their seeds, and make work for future years. The meadows grow increasingly foul, and the hay is of poorer quality, however abundant it may be. We are not aware that liming has anything to do with the multiplying of these weeds, except as it increases the fertility of the soil. They grow abundantly in land that has never been limed. It is impossible to clean the meadows with a single cultivated crop in the rotation, even with the most careful tillage. It wants two or three seasons of cultivation under hoed crops, and this may be had with corn, which should have manure, or by improving the fallow, which sometimes takes the place of the oat crop to exterminate the weeds. The latter would be the more effectual. By starting early in the season, 8 or 10 crops of weeds could be killed, simply by harrowing the land, after the first plowing, before it would be time to sow wheat. Then, if absolutely clean clover and grass seed were sown, the meadows would present a much more inviting appearance, and the big barns would be filled with a much better quality of hay, and more of it.



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PINNATED GROUSE, OR PRAIRIE CHICKENS. — Drawn and Engraved for the American Agriculturist.

This beautiful game bird, now very rare east of the Alleghany Mountains, and only found in New England on Martha's Vineyard and some of the adjacent islands, was once doubtless abundant over all the northern United States. Even now it is more common upon the prairies of the Interior and Western States, than even our domestic fowls. Still it is gradually becoming rare, and the time is not far distant when it will, like the wild turkey, be found only in secluded retreats. This bird is placed by naturalists in a different genus from the Ruffed Grouse, or Partridge, which it resembles in many respects, and is called *Cupidonia cupido*. The bird is about 16½ inches long, and the plumage is barred with whitish brown and brownish yellow, in different degrees of intensity, darker above and of an ashen color beneath. The legs are feathered, or rather clothed with an hair-like covering; and on each side of the neck, covering

a bare spot, is a tuft of slender pointed feathers. When the cocks strut, as they do in the pairing time, like a turkey gobbler, these tufts are expanded and form a sort of half ruffle, and the bare spots of the neck swell out with wind so that in some cases they are said to resemble oranges. The males utter a peculiar note, called tooting, which may be heard a long distance. Prairie chickens frequent the dry prairie, avoiding moisture and thick woods. They breed freely, bear severe winters tolerably well, living upon acorns, berries, buds, and grass seed, when they cannot get grain. During the cold weather they are exceedingly abundant, even in our most eastern markets. Their flesh is brown, more juicy than that of the Partridge, and very well flavored, and will be more and more esteemed. This grouse is not migratory, except as it wanders in the autumn or winter in search of food. At these seasons it is almost invariably

found in companies of ten to twenty, but these separate as the pairing season approaches. Young birds are easily domesticated, at least so as to be perfectly tame, if partially confined; but we have no knowledge of the experiment of their thorough domestication being carried out. It is highly probable that they might become so tame as to lose their desire to stray, and adapt their manners to man's desires and necessities as thoroughly as the wild turkey. The female lays about a dozen eggs, sharply ovoid in shape, and of a dusky drab or grayish color, dotted with brown. The nests are well concealed, and more frequently found by the ruinous tread of a careless foot than by the eye. Those who have tamed them, report that they never drink as other birds do, but take the drops of rain and dew — and this should not be forgotten by those who try to domesticate them, for they doubtless need water like other poultry.

The Virgin's Bower.

After the leaves have fallen there will often be seen in thickets and among the bushes along

the roadsides large tufts which look like wool. These, upon examination, will be found attached to a vine, which is our most common species of *Clematis*, (*C. Virginiana*). This vine, being a native, is not often seen in cultivation, but it has merits which give it a claim to a place in the garden. The leaves are three-parted, and like other climbing species of *Clematis*, twist their stalks around other objects and thus serve as tendrils to support the plant. The vine is valuable for its late blooming; the flowers, which appear in July and August, are white, and borne in clusters. The plant is a free flowerer, but some specimens are more showy than others, from the fact that it is sometimes dioecious, and the pistillate flowers make less display than those which bear stamens. Not only is the plant pleasing in flower, but it is quite striking in fruit, on account of the woolly tufts before spoken of. These tufts are made up of the long, hairy tails to the small, seed-like fruits. The engraving gives a small tuft of this woolly fruit, and at one side a few of the fruits separate. The leaf and flower are also shown. Besides the fanciful name of Virgin's Bower, it is sometimes called Traveler's Joy. It is readily transplanted from its native localities. The European Sweet Virgin's Bower, *Clematis Flammula*, has much the habit of our species; the foliage is more delicate, and the flowers delightfully fragrant. Three other native species of *Clematis* are found southward and westward, having larger flowers, which are not in clusters, but solitary, and one, *C. Verticillaris* (formerly *Atragene*), is one of the rarer plants of the northernmost States. None of these, however, equal in beauty the elegant species and varieties with which Japan and China have enriched our collections. Some of these have flowers six inches across, which present various shades of color from white to the richest purple. Great improvement has been made of late by crossing and hybridizing the *Clematis*, and each year some new and attractive varieties are brought out.

The Scuppernong Grape.

Of late, almost every Southern agricultural journal has strongly advocated the cultivation of the Scuppernong grape, and it is claimed that the manufacture of its wine is to become an important branch of industry in those States in which the climate admits of its growth. The grape is a variety of the Bull, or Bullace, grape

of the South, which is botanically the *Vitis vulpina* of Linnaeus, and has also been called *V. rotundifolia* by later authors. The bark does not separate as in other species; the leaves are

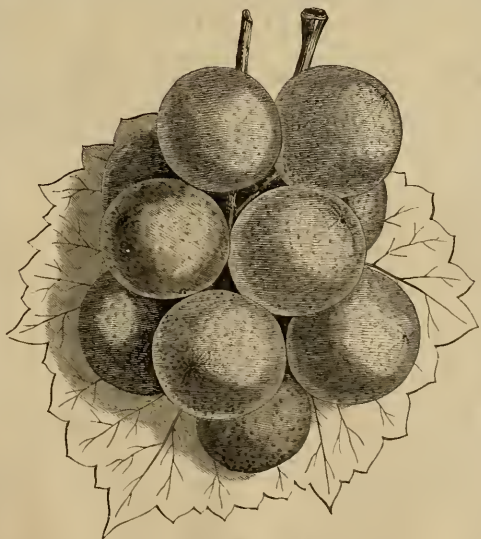
which the first named is the best known and most cultivated. The berries of the Scuppernong are from three-fourths of an inch to one inch and a fourth in diameter, and in clusters of

from two to twenty. The engraving is of the natural size, taken from a specimen sent by M. T. Garrett, Halifax Co., N. C. The fruit drops from the cluster when ripe, and is collected by placing sheets on the ground, and shaking or beating the vines. Though what is called a white grape, it is of a greenish yellow color, marked with small brown dots. The skin is very thick and leathery, containing an abundant, rather pleasant juice, with a tough pulp. It has been described as having a "fine musky aroma," but to our notion it is a marked foxiness, a little less disagreeable than that of the Northern Fox-grape. The vine is trained upon horizontal arbors, and is not shortened in by pruning, but allowed to spread over a large space. The fruit is said to be produced on spurs two or more years old, and not, as is the case with other varieties, upon the shoots of the current season. The vines throw out numerous aerial roots a foot or more in length, which, though often injured by winter, are renewed again. In vineyards the vines are planted 20 feet apart each way, or at even

VIRGIN'S BOWER—(*Clematis Virginiana*.)

round heart-shaped, coarsely-toothed, both surfaces smooth, with the lower more shining than the upper; berries few, large, and purple.

greater distances. Vines ten years old are said to yield thirty bushels of fruit, and a single vine is reported as having produced two hundred and fifty bushels at a crop. In the earlier accounts of Scuppernong wine, sugar, and brandy, or whiskey, were considered important additions. Of late, it is claimed that a good wine can be made by the use of one and three-fourths of a pound of sugar to a gallon of juice, and probably when the matter becomes better understood a good article will be produced from the simple juice. The vine is said to flourish from the Potomac southward, and its cultivation is rapidly extending. We notice in the Southern papers the publication of a work by J. Van Buren, of Ga., devoted entirely to the culture of the Scuppernong, but it has not yet reached us. Not having seen the vine in fruit, we have condensed the above account, in part, from the forthcoming Gardening for the South, to which Mr. Van Buren contributed the article on grapes. . . . Since the foregoing was in type, a gentleman who was present at the recent grape exhibition at Hammondsport, N. Y., informs us that the Scuppernong must stood lower than that of any other grape tested. If this be the case, this variety cannot rank among the wine grapes, as no grape can be placed in this class with a must so weak as to make the addition of sugar necessary.



SCUPPERNONG GRAPE.

From this species are derived the Scuppernong, Thomas, Flowers, Mish, and other varieties, of

Parasitic Plants.—The Dodders

The Dodders are so striking in appearance that they naturally attract attention, and a num-



Fig. 1.—COMMON DODDER.

ber of specimens have been sent for the purpose of learning what they were. Not only this, they sometimes injure cultivated plants; one species is a well-known enemy to the flax grower, and we recently had an instance of the appearance of another upon nursery stocks. In France, a Dodder is seriously detrimental to the growth of clover. The Dodders are all true parasites, deriving their sustenance from the plants to which they attach themselves. There are some sixty species enumerated as inhabiting different parts of the world, of which nine are found in the Northern United States. The characters which distinguish our species are for the most part minute, and all that the general reader will care to know are the habits common to the whole. The botanical name of the genus of Dodder is *Cuscuta*, which is of uncertain origin. Starting from the seed, we have a minute, thread-like embryo, which germinates in or on the ground. The little thread uncoils, and soon attaches itself to some other plant by means of a small projection from its surface.



Fig. 2.

live entirely by stealing, the Dodders are without leaves, but have a few minute scales to show where they might be; the color of the plants is yellow or reddish. In figure 1, a small portion of our commonest species, *Cuscuta Gronovii*, is shown of the natural size. The flowers, which appear in late summer or in autumn, are minute, but often in such dense clusters as to be conspicuous in the mass. A single magnified flow-

er is seen in the figure. The Dodders are placed in the Convolvulus Family, as they have some points in common with the Morning-Glory. The little pod which succeeds the flower has four small seeds. In figure 2 we have another species, *Cuscuta compacta*, in which the flowers are densely clustered. This species attacks the Compass plant and other tall Composite plants of the West, and as the stems soon die away and leave only these white cords upon the plant, it is still more puzzling to those unacquainted with it than the others.

While some Dodders show preference for particular plants, others seem to be indiscriminate in their attachments. It is not probable that any of our native species will become troublesome to cultivated plants, the nursery case above referred to being the only one we recollect to have seen; but should the native or foreign ones make an invasion, the only known remedy is to pull up the plants to which they are attached. As the thread-like stems of the Dodders are to be seen long before they flower, it cannot be difficult for those who know the character of the plant to keep it in check.

The Longworth Grape Prize.

The *Agriculturist* has at various times expressed its opinion that there could be no one variety of fruit of any kind, which would suit the whole United States. The Longworth Wine House, of Cincinnati, offered magnificent premiums for wine and table grapes, to be awarded at the Autumn Fair of the Cincinnati Horticultural Society. That any award could be made which would give satisfaction from Maine to California was not to be expected, and had our advice been asked, we should have counseled the Longworth Wine House not to make any such offer. The premiums were offered, the terms published, and the beautiful plate which was to go to the successful competitors, made. When the Committee of Award met, it was found that the Hon. Marshall P. Wilder and Solon Robinson, who were appointed to represent the East, were unable to attend, and the writer was named to fill a vacancy. He accepted the office in full view of the dissatisfaction that the award, however it might go, would bring, and took it in part for his friendly regard for Capt. W. P. Anderson, who has done so much for horticulture in Cincinnati, and also from a desire that the East should be represented on such an important committee. He asks those who dissent from the award, to read its conditions. The Ives was judged to be the best wine grape. We know that there are those who will oppose this verdict. Our answer to these is, that John E. Mottier, known as the veteran wine maker of America, and as a man whose judgment in such matters has always carried the greatest weight, was the most enthusiastic supporter of the Ives. Without other comment we append the report of the Committee. To Capt. W. P. Anderson, Proprietor of Longworth Wine House, Cincinnati, O.:

DEAR SIR—The Committee appointed to decide upon the best Wine Grape of our whole country, the best Wine Grape of the State of Ohio, and the best Table Grape for our whole country, and to distribute your very munificent premiums therefor, beg leave to report that they have examined all the samples of grapes and wine presented to them, carefully and critically, and, after much discussion and deliberation, have made the following decision and award:

For the best Wine Grape for the whole coun-

try—Ives Seedling; and the first premium—silver-plate of the value of \$350—awarded to Lewis Finch, of Plainville, Ohio, he having the best display of that variety present.

For the best Wine Grape for Ohio, the Concord was agreed upon, and the second premium—a silver goblet of the value of \$100—awarded to E. A. Thompson, of Cincinnati, for the best display of that variety.

For the best Table Grape for our whole country, the Concord was agreed upon, and the third premium—a silver cup of the value of \$50—awarded to Frank Murphy, of Cedar Avenue, Ohio, for the second best display of that variety.

Your Committee would also make honorable mention of A. E. Mottier, and others also competing for these premiums, for the fine display of grapes and wine.

Your Committee, aware of the great difficulty of selecting a wine or table grape for the entire country, embracing many degrees of latitude, entered upon the discharge of their duties with many misgivings; they were also restricted by the generous donor in this, "that the plants, when generally cultivated, shall be perfectly healthy, hardy, and productive in all sections of the country," and after a thorough canvass of all the varieties, became satisfied that, although there are better varieties of table grape, yet they are sectional, and will only mature their fruit on certain soils and in certain locations, and that the Ives and Concord are the only known varieties that fulfill the restrictions imposed upon your Committee.

C. W. SPALDING, Missouri,
GEORGE THURBER, New York City,
JOHN E. MOTTIER, Pennsylvania,
GEORGE GRAHAM, Cincinnati,
E. A. THOMPSON, Cincinnati, Chairman,
Committee.

The premium received by Mr. Finch was a silver pitcher, two goblets and a waiter, all of them richly chased and of elegant and appropriate design. The goblet awarded to Mr. Thompson and cup received by Mr. Murphy are both of beautiful proportions and tasteful finish, and bear the emblems of the vine.

Apples for the Southern States.

Not only are our choice Northern varieties unsuited to the Southern States, but it is found that even in the West and Southwest the majority of the best apples are of Southern origin.

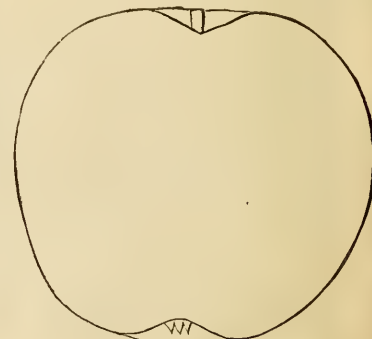


Fig. 1.—JULIEN.

We give here a select list of varieties suited to the Southern States, by Mr. J. Van Buren, the

pomologist who has done so much to make known new seedlings of Southern origin, and

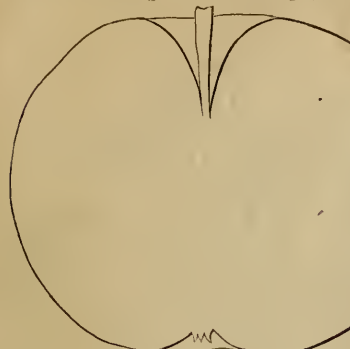


Fig. 2.—AROMATIC CAROLINA.

who prepared the article on apples for White's Gardening for the South, now just published.

SUMMER VARIETIES. AUTUMN VARIETIES.

Early Harvest.	Buckingham.
Red June.	Disharoon.
Julien.	Myer's Nonpareil.
Aromatic Carolina.	Autumn Wine.
Sweet Bough.	Rome Beauty.
Red Astrachan.	Meigs.
Toccoa.	Chestatee.

WINTER VARIETIES.

Summerour.	Camak's Sweet.
Van Buren.	Great Unknown.
Mangum.	Webb's Winter.
Cedar Falls.	Mountain Belle.
Elarkee.	Gladney's Red.

Figures and descriptions of some of the varieties above enumerated are appended.

JULIEN.—Fruit, medium size, roundish, tapering somewhat to the eye; calyx, small, in a narrow basin; stem, short, in a moderate cavity; skin, thin, yellowish white, beautifully striped and marbled with carmine; the fruit is of a delicate, waxy appearance; flesh, white, tender, juicy, and fine flavored. The best summer apple known; tree, a fine grower and very productive. The fruit, which ripens the middle of July, is very rarely affected by worms.

AROMATIC CAROLINA.—Fruit, large size; oblate in form, tapering to the eye; stalk, short

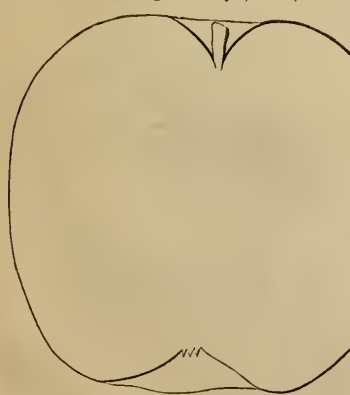


Fig. 3.—ELARKEE.

and fleshy, in a deep, wide cavity; calyx, in a wide, shallow basin; color, green, striped with dull crimson, and covered with a white bloom;

juicy, and of a fine aromatic flavor. Tree, a vigorous grower, and very productive. Ripens from the 15th July to the 1st August.

ELARKEE.—Size medium; form conical; color dark red on a yellow ground; flesh yellowish, hard, and with sufficient juice; acid when first gathered, but becomes of pleasant flavor in March and April. Tree thrifty and very hardy. Originated in Macon County, North Carolina.

CHESTATEE.—Medium to large; slightly conical; calyx in a hollow basin; stem short and slender, in a deep cavity, with spots and small specks of black; flesh white and juicy, rather too acid for a dessert fruit, but good for cooking. Ripens in September, and keeps until December.

CAMAK'S SWEET.—Fruit medium to large; nearly round; dull whitish green, mottled with green russet, the patches of which are made up with small dots, with a dull bluish cheek upon the side toward the sun; stem short and slender; cavity and basin broad; calyx closed; flesh firm and tender, scarcely sweet; juicy and fine flavored; best. Keeps sound until February.



Fig. 4.—CHESTATEE.

MOUNTAIN BELLE.—Size medium to large; oblate and conical; color, an orange ground, shaded and striped with red; stem short, in a wide, deep cavity; calyx in a moderate sized, smooth basin; flesh white, hard, and juicy, a little tough in texture, and of a fair sub-acid flavor. Ripens November to May. Fruit of second quality, but a famous keeper. A native of Habersham County, Georgia, found in an old Indian field by J. Van Buren.

EARLY MAY.—Fruit, small, round; skin, thin, yellowish green, when ripe, with sometimes a brownish red cheek; stem, short, in a shallow cavity; calyx, small, closed, in a shallow basin; flesh, yellowish white; flavor, mild acid, but rather astringent; begins to ripen from the 10th to the 20th of May.

VAN BUREN.—Size medium to large; globular, and a little conical in form; color, yellow ground, shaded with dark red, with specks and patches of russet; stem short and fleshy, in a narrow, medium sized cavity; calyx small, and closed in a shallow basin; flesh yellow, juicy, and quite tender for a good keeper. Ripens in October, and keeps until April. A new and

first rate winter apple, found and named by Elijah Sutton, Esq., Habersham County, Ga.

Notes on Grapes and Grape Culture.

Some remarks about pruning intended for this place must go in a condensed form in our customary notes about work. So, also, such notes as we have made on the conduct of the older varieties this season must be postponed in favor of those upon the newer or less known candidates for public favor. Grape-growers generally will be interested in the report of the Committee awarding the Longworth Prize, given in another column. An engraving and description of the Ives grape will be found in the American Horticultural Annual for 1867.

MOTTLED.—This is a seedling about which less has been said than its merits seem to warrant. We hear good accounts of it wherever it has been fruited, and have this year seen bunches which for perfection of form and excellence of fruit, entitle it to a higher rank than it heretofore held. It is "mottled" only when partly ripe.

MOUNT HOPE SEEDLINGS.—Messrs. Ellwanger & Barry, some years ago, raised a large number of seedlings, only one of which, we think, has thus far been considered worthy of exhibition.

It was unfortunate that biped robbers, with or without feathers, took almost the whole crop of their favorite seedling, just before the exhibitions. While they have some twenty or more seedlings, which in other hands might be considered worth propagation, they, with a careful discrimination, reject almost the whole, if not all but one.

UNDERHILL'S SEEDLINGS.—Mr. Stephen Underhill, Croton Point, N. Y., has been engaged in hybridizing our native grapes with foreign pollen. From a hasty review of those that were exhibited at Whitlock's Grape Show, we should say that there were too many of a similar character. Now-a-days, a new grape must have some positive quality, to distinguish it, and while we think Mr. U. has reason to feel encouraged by his experiments we hope he will not follow the example of Mr. Rogers, and put out a series of grapes that are mainly to be distinguished by their labels.

EUMELAN.—It is a matter of regret that Dr. Grant should have exhibited the Eumelan this season, as the fruit from old vines recently transplanted do not fairly represent the grape. We saw the fruit before the stock of vines was purchased by Dr. G., and regard it as an excellent and very early sort, with more character than is usually to be found in early grapes.

WALTER.—This grape has been sparingly exhibited, but no general estimate can be made of its value until it comes into general cultivation. It has a small bunch, with a very sweet berry, of medium size, and a firm, tough skin.

WYOMING RED.—Exhibited by Dr. S. J. Parker, of Ithaca, N. Y., and we believe a seedling of his. We have not seen it, but it is reported as bearing so strong a resemblance to the Walter as to be liable to be confounded with that variety.

DIANA HAMBURG was on the tables on the first day of the N. Y. State Fair, but was for some reason removed, and we were unable to inspect it. The vine, though strongly foreign in character, has for two years done well in N. Y. City, and promises to retain a place on the amateur list, at least. A large, handsome bunch.

SALEM.—This we have only seen grown in a cold house, where it proved a good bearer, with a decided foreign and very pleasant flavor.

A Neglected Ornamental Tree.—The Kelreuteria.

It is curious to see how old and really meritorious plants become crowded out by newer introductions, and are quite lost sight of. Amongst ornamental trees the Kelreuteria affords an instance of this neglect. The tree was introduced into England from China, over a century ago, and has been for a long time in this country, yet it is only rarely that we meet with a specimen. Some time ago Mr. Wm. L. Orange, of Edwards Co., Ill., sent us a specimen for a name, and in his accompanying letter of July 6th describes it so well that we quote his account of the tree.

"It certainly is one of the handsomest trees that I have ever seen. The largest one that I have is about 35 ft. high, and has been covered with bloom like a yellow cloud for the last three weeks. The tree makes its growth by the first of June, and from the end of the new wood sends out the flower cluster, which is from 18 inches to 2 feet in length, which branches until each head is from 1 to 2 feet across. The seed pods are shaped somewhat like a grain of buckwheat, and grow about 2 inches long, and become so thick that the stem cannot be seen. The pod is first red, then yellow, and then brown. The trees are very easily raised from seed, and bloom when 3 or 4 years old; they are among the first to put out in the spring, are very hardy, and I never knew anything to eat the leaves. I regard it as the best shade tree that I know of."

The engraving shows the leaf, flower, and fruit, all very much reduced in size. The leaves are of a deep brilliant green, which in autumn turns to a fine yellow. The trees are priced in the nursery catalogues at 50 cents each. Seeds ripen abundantly, but we do not find them in the catalogues of dealers.

A Useful Insect.—The Wheel-Bug.

Some knowledge of insects is desirable for the farmer and gardener, if he be only to enable him to distinguish his friends from his enemies. There are many insects which are beneficial besides those yielding honey and silk, and they are useful from the fact that they are carnivorous. During a recent visit to a pomologist in Delaware, we saw numbers of the Wheel-bugs,



FIG. 1.—WHEEL-BUG—MALE.

Reduvius noecarius, which are so useful in destroying caterpillars, that our friend protects them with great care. The insect is striking in appearance, as will be seen from the engravings, of which figure 1 is the male, and fig. 2 is the female. The singular form of the insect, together with the curious semicircular ridge upon its back, will enable any one to recognize it. This ridge is marked with protuberances, and gives to the insect the common name of Wheel-bug. The eggs are deposited upon the bark of trees, fences, etc., in a more or less perfectly hexagonal cluster, as shown in figure 3. The proboscis is long and sharp, and when not in use, is fold-

ed, as seen in the figures. The movements of the insect are curious to watch; it moves its long legs and feelers with the greatest caution in approaching its prey, which it despatches with a thrust of its formidable weapon. It



KELREUTERIA.

should be handled with caution, as upon provocation it will sting and produce more pain than a bee. Prof. Glover, of the Agricultural Department, says: "It is constantly employed from the moment it hatches from the egg in destroying caterpillars and other insects, by first piercing them and then sucking out the juices. * * The young ones when first hatched are of a red color, and while they are young their food is plant-lice and other small insects, and when they can find nothing else they destroy each other. As they grow larger, they shed their skin, and their food is then large caterpillars, or indeed any insect that they can overpower. A dozen of these insects, if placed near one of the web nests of the caterpillar, so destructive to fruit and shade trees, will destroy almost every caterpillar in it, as each one is able to kill and devour several daily." Having given the amiable qualities of the Wheel-bug, we must mention one very disagreeable one. When disturbed it gives off a most repulsive odor, similar to, and quite as potent, as that of the common squash-bug (*Coreus tristis*). For this, however, it may be excused, for though scientifically related to that disgusting insect, it is a vastly more useful one in orchards and gardens.

Make Poudrette for the Garden.

It is in the power of every family to supply its kitchen garden with a great abundance of manure, at the expense of a little attention and very little labor. The fact that dry earth is a complete deodorizer of the most offensive sub-

stances has been known and employed practically for hundreds of years. Of late great attention has been given to the subject of dry earth closets in England, and to this allusion has been repeatedly made in these pages. This is a most

valuable application of the disinfecting and absorbent qualities of well-dried earth, and is in this wise: Common soil is raked over, to pulverize it, run through a screen, to free it from stones, sticks, etc., then spread in the sun or under cover on boards to dry. In dry weather it is barrelled or placed in bins, and stored for use. It is used thus: The privies or earth-closets are arranged in various ways, but all so as to admit of half a pound or more of the dry earth being thrown into them whenever used, and of all the contents being occasionally thoroughly commingled. It requires about a pound and a half of earth per day for each individual who uses the closet, to cause complete disinfection and deodorization. The contents become slightly moist, and when the box, drawer, or other receptacle, becomes full, they are removed, and exposed to the sun or dry air for desiccation. When dry the earth is again made use of, and so employed four or five times, or perhaps more, before it loses perceptibly its purifying qualities. We shall undoubtedly have, before long, any number of patented contrivances for earth-closets to be used in dwellings, in sick chambers, and similar places. There is, however, no occasion for our readers to wait for these patented articles to be put upon the market before they avail themselves of the properties of dry earth. Nothing is simpler than to arrange a privy with a good-sized drawer, sixteen or eighteen inches deep, and to procure a

supply of earth to last during the cold weather. Of course the earth need not be used twice if it is more convenient to provide a constantly fresh supply than to re-dry that once employed. If the contents be mingled by a hoe or shovel once a week or oftener, if the family be large, it will be all-sufficient; the poudrette will be made, and all offensiveness prevented, summer or winter. If the location be such that the contents of the drawer freeze solid in extreme



FIG. 2.—WHEEL-BUG—FEMALE.

weather, no harm will occur, though the commingling of the ingredients will be prevented.

A great many village gardens languish from the lack of manure. Really good, well-rotted manure is hard to get, and it is often costly; so guano, superphosphate, and other commercial fertilizers are employed. At first they do well, but after a while things do not flourish as if they had good liberal dressings of barn-yard manure. Poudrette, saved in the way proposed, will take the place of the best stable or yard manure.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Sea-side Fare.—Scallops.

Scallop shells are the sea shells that are best known to those who live far inland, as their beauty of form

to. Scallops are stewed much in the same way as oysters, but as they have no liquor of their own, milk, or milk and water is added. They require to be cooked slowly for about 10 minutes, or until opaque white to the center. Season with butter, pepper, and salt. They need much more salt than oysters. To fry, cover the scallops with Indian meal, or finely powdered cracker, as for oysters,

then cook in plenty of fat, to a rich brown. While they must be cooked quite through, they should not be shrunken. Baked scallops are done in a dish the bottom of which is first covered with a thin layer of fine bread crumbs, then a layer of scallops, another of crumbs, and so on; when the dish is filled, cover with thin slices of bread, well buttered; use salt and pepper as the materials are put in. Bake in a moderate oven 20 to 30 minutes. Large scallop shells are sometimes used as dishes in which to cook oysters and other things in a fancy

way; hence we have "scalloped" oysters, chicken, etc. In England they have scalloped scallops. The scallops are first stewed, then chopped, mixed with bread crumbs, seasoned and buttered, put into the shells, and placed in an oven until browned.

About Pickles.

Although "Aunt Hattie" had a great deal to say about pickles last month, it seems from the inquiries we have had that she did not touch all the points, and we will endeavor to answer a number of correspondents in a sort of mixed pickle article, in which each must pick out his or her own answer.

Almost any vegetable used as food will make pickles; if it has no character itself, one can be imparted by the use of spices. In pickling it seems to be necessary that the vegetable should, as a general thing, first be placed in salt and water. Most things put directly into vinegar do not make good pickles. A pound of salt to two quarts of water is the average strength, and in this the article to be pickled may remain a few hours, or over night; then drain and add hot or cold vinegar, plain or spiced, as may be. Articles for pickles that have been put down in salt for keeping need a great deal of soaking, in order to freshen and plump them. The water should be repeatedly changed, until the pickles are fresh enough, and the process is hastened if warm water be used. Complaint is made that stores will not buy "home made" pickles, but send a long distance for those put up in factories. Store-keepers buy what will sell. Most people purchase an article that is attractive in appearance in preference to one that is not so. Pickles put up in whiskey vinegar look better than those in cider vinegar, and consequently sell more readily. Good cider vinegar gives the best flavor. Many ask us about the clear vinegar with which the bottled pickles are prepared. This is whiskey vinegar; when good, it is perfectly wholesome, and being colorless, pickles made with it look well, but they lack the aroma of those made with cider vinegar. This whiskey vinegar is sold under the name of white-wine vinegar. Pickles are always best kept in glass jars or in wooden vessels. In boiling the vinegar, use a glazed kettle or a tin one; in the latter case, let it remain as short a time as possible. If the pickles are green, all right, but do not trouble about the color, if they only taste well. They can be made green by the use of copper vessels—but don't do it. A kind of pickle is imported under the name of Picailly, Chow-chow, etc., which consists of cucumbers, cauliflowers, onions, beans, etc., in a thick, rich, yellow pickle. One English concern is celebrated for the manufacture of this, and we have had several in-

quiries for directions to prepare it. We have tried several recipes without producing an article equal to the imported. We give the last recipe we have received for Picailly from an English source. "Take a pound each of ginger root, garlic, black pepper, and mustard seed, $\frac{3}{4}$ oz. Tumeric root, some cayenne pepper, and one quart of vinegar. Soak the ginger in salt and water one night, and slice it; peel the garlic, slice it, salt for three days, and drain it dry; bruise the Tumeric, black pepper, and mustard, put all together into a jar, and pour the boiling vinegar over them. Keep the pickle for a month, and then put into it cucumbers, cauliflowers, or any other vegetable that has been previously salted." We have not tried this.

Toast.—How to Make it.

Did the reader ever ask for toast at a hotel? If so, he probably was served with a piece of fresh bread, burned before the fire, the charcoal mostly scraped off, and served under the name of toast. Now there is a little science involved in making toast. It should always be made of stale bread; the heat drives off whatever acids may have formed in the loaf, but more than that, the starch of the flour is more or less converted by the heat into a more digestible substance, dextrine. By nicely toasting a slice of bread we save the digestive organs a certain amount of labor; hence toast is usually acceptable to invalids and those of impaired digestion. So much for the philosophy of the thing; now for the practice. Make the toast from a stale home-made loaf. Bakers' bread will make an imitation of toast, but not the thing itself. Slice moderately thin, and place on the toasting fork, or in some of the wire toasters, and hold it near the fire until it is well warmed through. Then—here comes the rub—bring it near the fire where it will quickly become of a light brown, or rather of a deep golden yellow, turn and treat the other side the same, and serve. If buttered toast is desired, apply butter in moderate quantity while hot. Toast should not be piled upon a plate, as in that case the crispness is lost. If there is no toasting rack, lay the slices lapping over one another, shingle fashion, so that the moisture of the lower slices may escape, and not be absorbed by the others.

A Foot Rest.

In the "sanctum" of a friend we saw an odd looking piece of furniture, the use of which was not easy to conjecture. It consisted of two hardwood boards, each 16 inches long and 12 inches wide, put together as shown in the engraving, the horizontal piece being fastened 3 inches below the top of the upright one, and braced by semicircular pieces let in at the edges. It is not an easy matter



FOOT REST.

to warm or dry the feet by a stove, where the fire is at a distance from the floor, and the ordinary way is to rest them upon a chair. Our friend finds this rest to be much more comfortable and convenient, as it accommodates itself readily to any slight movement or change of the position of the body.

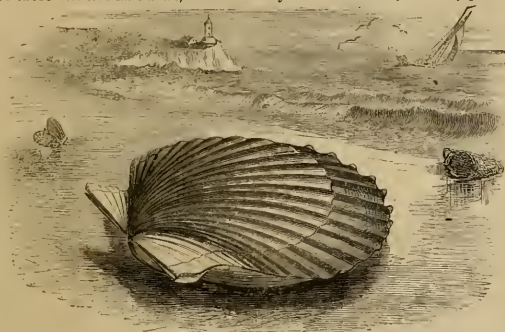


Fig. 1.—SCALLOP SHELL.

brings them in use for various kinds of ornamental work. The appearance of the shell is shown in figure 1, which represents one of medium size. For most ornamental purposes much smaller ones are used, while those sent to market are usually much larger. To see the animal in its greatest beauty it should be in an aquarium or other vessel of sea-water. When all is quiet it will open its shells as far as the connecting "mantle" will allow, and this will be seen to be studded with brilliant spots which glow like purple jewels. The scallops inhabit deep water, and during severe storms are thrown upon the beach in large numbers, where they may be picked up; but they are mostly taken by dredging in deep water. In the New York market they are rarely to be found in the shells, but in other sea-board cities it is common to find them so. The scallop, as seen out of the shell, is a short, white cylinder, and it puzzles many to see how this can be a "shell-fish." The only eatable portion is the large and strong muscle that holds the shell together. This is shown in figure 2, in place, one of the shells and all the rest of the animal being removed. This muscle corresponds to the one called the "eye," in the oyster, but it is much larger in proportion to the size of the animal, and it has a similar fibrous structure. It has a remarkably sweet taste, much like that of the flesh of crabs, and is highly relished by many, though not considered as particularly digestible.

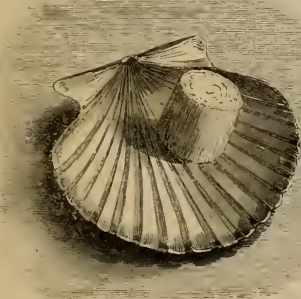


Fig. 2.—EATABLE PORTION OF SCALLOP.

Scallops may be opened by placing them in a pot over a fire, and boiling them as directed for clams. When the shells open, the eatable portion is readily picked out, or they may be opened with a knife, and all but the part described rejected. Having shown which the eatable portion is, in speaking of the methods of cooking that part alone is referred

Mending a Rag Carpet.

Mrs. H. M. R., of Columbia Co., Pa., sends a number of suggestions in matters relating to economy in the household, of which we at present give the following: "One morning last winter as Henry took some hot coals out of the sitting-room stove to start a fire in the kitchen, he dropped nearly half of them on my new rag carpet, and burned seven or eight holes from one to two inches in diameter. At first I did not know what to do, but soon made up my mind to try to mend them, and I think I succeeded admirably, for when they were done they could not be seen half way across the room, and they would never be noticed by anyone unless his attention was called to it. I first cut both rags and warp out as far as they were the least bit tender with the heat, then went to the rag drawer and selected rags as near the color of those burned as possible, and carefully joined every rag burned with one of its own size and color. I was lucky enough to have yarn like the warp, for I made the carpet myself. Then I served the warp the same way, weaving it in the rags with a darning needle. It is rather difficult getting the warp just right, unless you know how. Begin by putting in every alternate thread; this brings them all over and under the same rags, the first going over. Then commence and put in those skipped, taking every other one left the first time over, and so on until all are in. It is better to pull some of the warp out a little farther than it was burned, so that the knots may not all come in one place. This is easier done while the carpet is tacked on the floor than at any other time. It will be found rather trying work at first, but all that is necessary to accomplish it satisfactorily is a little patience and perseverance. Where there are many holes it is better not to try to mend more than one or two at a time. But I think it decidedly pays on a new carpet. Whether it will on an old one each one must judge for herself after she has tried it."

Economy in Coal Hods or Buckets.

Coal hods—called variously scuttles and buckets—will wear out, and the bottom is the place which first yields to wear and rust, this portion often failing when the rest is good. Mr. Frank Lee, of Ky., says: "My plan is: fit an oak board $1\frac{1}{4}$ inches thick in the rim of the bucket bottom, and nail it there through the rim. A bucket treated thus will last years longer than it otherwise would. The wooden bottom should be put in when new, but if the bottom is broken and partly worn out it will do to put it in then. I have in use two buckets that became worthless, and I was about throwing them away when the idea occurred to try a wooden bottom, which I did, and they are now worth more than when I bought them."

More Variety in Food Wanted.

The farmer raises food for other people, but oftentimes does not cater wisely for himself. There is much just reflection upon farm life in that miserly maxim first uttered as a sarcasm: "Sell what you can; what you cannot sell, eat; what you cannot eat, give to the pigs." We do not believe thrift lies in this direction. The producers of food are entitled to the best their farms afford, and in the long run this is the true economy. One secret of the strong drift of our farming population toward the city lies in the farmer's table. Children crave a variety of good, wholesome food, and enough of it, and any stint of it is certain to be remembered when they come to shift for themselves. The citizen always has a variety of food within his reach, and nothing but poverty prevents him from enjoying all that the farm sends to market. He has all the fruits and vegetables in their season, and in the best condition in which he can get them. He has fish and flesh in great variety, and his appetite is never cloyed. But upon the farm, where the best of every thing is produced, salted meats are too often the staple provisions the year round, and corn

meal cooked in some form is a perpetual feast. Now, there is no reason in the world why the farmer should not be the best fed man in the community. He ought to be, as an advertisement of his business. A tailor, of all men, cannot afford to dress shabbily. Coarse, ill-fitting boots are a bad card for a shoemaker. The producers of food should show us how to cook and enjoy it. Many farmers we know do give us this advertisement of their business. Their guests sometimes forget to come away, when their visits are finished. But this is a less evil than a hospitality which one is ashamed to offer, and which no one accepts a second time. The physical man should be kept in the best condition by a varied and generous diet, and the glory of the farm be made to culminate in the fine specimens of men and women it produces.

Sandwiches.

Francis Grosse, author of a dictionary of English local words, thus defines Sandwich: "Two pieces of bread and butter, with a thin slice of ham or other salt meat between them; said to have been a favorite dish with the Earl of Sandwich." Whatever great deeds the Earl may have done, his only recorded monument is two pieces of bread and butter with a slice of meat between them. The name, at all events, is enduring, but the monument disappears pretty rapidly, as every one likes sandwiches. They are in place at lunch, at tea, or at evening entertainments; they are most acceptable to travelers and hunters, and are good as a "bite" at any time when one is hungry. Sandwiches may be made off-hand, as they are eaten, or with more care, to be served at the table. For a hasty lunch, take two good slices of bread, well buttered, of a thickness proportioned to the appetite, and place between them slices of ham, tongue, corned or roast beef, or any other cold meat. Cold chicken or turkey, having a very thin bit of ham with it, makes a most excellent sandwich. The meat should always be cut very thin, and it is better to lay on several delicate slices than one thick one. Salt as required, and use mustard if it is liked. In putting up sandwiches for travelers, or hunters and fishermen, be generous, as they are apt to have consuming appetites. With sandwiches for the table, for parties, fairs, etc., more care should be used. For bread, a good, home-made loaf, baked in a square tin, will cut to the best advantage. It should be old enough to cut smoothly, and be sliced moderately thin with a sharp knife. Butter, and place the thinly cut slices of meat between; lay the sandwiches on a clean table, place a board on them, and press them just sufficiently to make them hold together; trim the edges square, stack on a plate, and cover with a damp napkin or cloth until served. Have the meat always very tender and thinly sliced, as it is exceedingly annoying to be obliged to "tug" at a sandwich. The best we have ever eaten were made of potted ham. The boiled ham is first chopped and then put into a wooden mortar and pounded until it becomes a smooth paste. This, spread upon a slice of bread and butter and covered with another, makes a sandwich more delicate than the Earl ever knew of.

Apple Pie as it Should Be.

A lady writes: "I have just been reading an article upon apples, written by George William Curtis. Speaking of apples and apple pie, he says: 'If you choose to slice and dry them, it is not their natural end,—but even then they will return you good for evil in pies that might persuade any pagan to be a Christian. Not doughy, clammy, fatty pies, which are a device of Satan, but those triumphs which have no bottom crust, and in which the spoon sinks and sinks—Selah!'

For pies proper no condemnation can be severe enough. It is one of the alarming signs that we are getting to be a pie-eating nation. (Getting to be?) Pies are the staple food at all the taverns in the land. The rural kitchen is full of pies. The

railroad stations are piled with pies. The eating-rooms in Fulton Market are lined with pies. It is the popular form of taking dyspepsia and ruining the health. The smart Sala, who hired himself to the London Telegraph to ridicule this country, sparkled when he wrote of pies; and the worst of his wit was that it was true. It is a prostitution of any fruit, an injury, a crime, to bury it in a pie. But against the venerable and august apple it is a peculiar infamy.—'Thus,' continues Mr. Curtis, 'nothing is so improper as a pie proper. But there are preparations called pie which are truly delightful; and chief among them that which slices the apple without making a mush of it, and after it slices it, spices it, and then bakes it under a firm, light, thoroughly browned, and dry crust.'

Now I do not agree with him in regard to all fruit being spoiled when put between two crusts, for pies made of rich preserve in this manner are delicious. But I do think with him that pies made of apple sauce might have originated from the source which he affirms. The manner of making the delightful pie to which he alludes is as follows: Take a deep dish, invert a teacup in the middle and slice around it some juicy, tart, high-flavored apples; then add a little water, sugar, and nutmeg, cover with a good, rich, light crust, and bake until nicely browned and the apples thoroughly cooked."

The Aetna.

The Aetna is an ingenious contrivance for heating liquids, or cooking small messes on short notice, without the trouble or expense of kindling a large fire. Two flanges are put on at the bottom of the vessel, as shown in the figure, the one to elevate it a little above the table on which it stands, and the



other, inverted, to make a gutter for the alcohol, which is the article used as fuel. The alcohol when lighted makes a blaze on all sides of the cup, and heats it very rapidly. A teaspoonful will warm a pint of beef tea sufficiently for drinking, or cook the same quantity of arrowroot or

other food. This vessel is a very great convenience in the sick room, especially in the warm months, when a fire is oppressive. It can be had at the furnishing stores, or any tin worker can readily make it. It should have a wooden handle.

CHILDREN'S SWINGS.—In a recent letter "Aunt Mattie" says: For a time we had only oneswing, and the vexation and annoyance the one caused cannot be calculated. Every few minutes Willie would be in to complain that Lizzie had swung enough, and that it was his turn, or Lizzie would cry because Bobbie had it, or would not push, etc., etc., until finally Edward and I compromised the matter by having a swing made for each one, even the two year-old baby being accommodated with a chair suspended securely to a branch of the tree. You would be astonished to see how differently things go under the new arrangement. Baby will swing by the hour, and often goes to sleep in his "little rock," as he calls it. I think a great deal of fretting and crying among children, and scolding among parents, too, might be prevented by the exercise of a little care and ingenuity.

THE HEALTH OF GOLD FISH.—These pets of the glass globe die early, like other beautiful things, as some of our fair correspondents complain. They are careful to change the water, and keep them clean, but forget that the carp is a voracious animal with a sharp appetite, and as much in danger of starving to death in his narrow quarters as a land animal. In confinement, however, it is best to give them animal food, such as worms, only occasionally, and let their principal fare be of pellets of stiff dough, made of flour and water only. Always remove all the food that remains uneaten.

BOYS & GIRLS' COLUMNS.

Fearful Convulsions.

A few months since we gave in the *American Agriculturist* a brief account of some of the most remarkable earthquakes on record, and the great destruction caused by them. The world has just been startled by reports of the greatest convulsion of this kind known in modern times; in some respects perhaps the most remarkable known to man. A district of country on the west coast of South America, 800 miles long, and from 200 to 300 miles wide, was shaken with fearful violence. Whole cities were thrown down in ruins, and thousands of the unfortunate inhabitants destroyed. In many places the earth opened, and smoke, steam, hot water or mud, were vomited forth in immense volumes. The force of the shock drove the waters of the Pacific away from the coast, and soon they came rolling back in an immense wave, fifty feet high, sweeping every thing before them. The Chincha Islands on the coast of Peru, from which the largest supplies of guano are derived, were entirely devastated by this fearful tide, and a great number of vessels were overwhelmed or wrecked on the shore. Recent accounts mention a startling phenomenon connected with the same great convulsion, now going on in Hawaii, out of the Sandwich Islands. This island, which covers an area of some 4,000 square miles, is apparently slowly settling into the sea, a change of several feet in the level having been noticed within a few months. These exhibitions of almost immeasurable power give some idea of the untold forces still at work within the earth, and which may yet entirely change its whole surface.

The Revolution in Spain.

Recent accounts from Europe inform us of a revolution in Spain, by which Isabella II, the reigning queen, has been deposed. The event is full of interest to the world, showing the advancement of right ideas of government. Instead of the people being the servants for the support and glorification of the monarch, the American idea of the people being sovereign and the government their servants is rapidly advancing. Queen Isabella II is the last of the Bourbon family, long noted as tyrannical and profligate monarchs. She was proclaimed queen in 1833, while only three years old. Until she became of age, the government was administered by the queen's mother, and afterward by General Espartero. By an ancient law no female could become sovereign, but Isabella's father, Ferdinand VII, had abolished the law by his simple proclamation, thus excluding his brother, Don Carlos, from his rightful succession to the throne. Don Carlos enlisted a large party in his favor, and for years waged civil war, known as the Carlist war, against the adherents of Isabella, but he was overpowered and driven from the country. Isabella was made reigning queen eleven months before she actually became of age. Her life has been marked by flagrant violations of right and even common decency. She was married to her cousin in 1846, but was notoriously unfaithful to him, and chose her favorite lovers as her prime ministers in the government. Fearful of rivalry, and incited by her ministers, she drove her own mother, her sister, and brother-in-law from the country, and also a large number of the most distinguished nobles and officers. Her reign has been almost a constant scene of turbulence, anarchy, violence, and bloodshed. At last retribution has come, and her kingdom is lost; let us hope never to be disgraced by her restoration. It is yet undecided what form of government will be adopted there; some are in favor of a republic, but they are probably in a minority, and some other family may furnish a head for the burden of a crown for a while longer, until the people shall have been educated to obtain and enjoy complete political freedom. Progress in this direction is very rapid all over Europe, and a few years may make very surprising changes in all the existing governments, and thus add much to history.

A Squirrel Hunt.

A large number of young ladies were gathered in the parlor of a boarding academy in Massachusetts, after dinner, when a red squirrel ran into the room. In an instant all was confusion. Some screamed with fright and sprang upon chairs, others ran from the room, while others closed the doors that they might capture him. After chasing him a moment or two he suddenly disappeared, and could be found nowhere, neither could any possible place of escape be detected. Soon after, as the ladies gathered at the tea-table, and were about to commence the evening meal, one of them uttered a piercing shriek. On examination the squirrel was found snugly stowed away in the folds of her skirt at the waist.

Suggestive Biography.—A dilapidated individual was overheard saying to himself: "I began the world with nothing, and I have held my own ever since."

A Sun-power Engine.

Mr. Ericsson, the inventor, best known as the originator of the Monitor during the late war, has completed an engine to be driven by sun power. His apparatus has not yet been publicly described, but must partly consist of some arrangement for collecting the rays of the sun, as is done by a burning glass, and using the heat to make steam or expand air. It is estimated by him that the heat derived from the sunshine on a surface 10 feet square (100 square feet) equals one horse-power. If this be correct, then the sunshine upon a moderate sized barn would give power enough to drive the thrashing machine, thrash out all the grain, cut all the wood, pump all the water needed, and perhaps do most of the chores, besides warming the boys' rooms in cold weather, and boiling the pork for dinner. Seriously, it is not impossible that a large portion of the work heretofore done by engines burning wood and coal may be accomplished by the mere use of the sun's rays. In fact, the sun has already supplied power for all our steam engines. Its rays imparted power to the growing forests. In ages gone by forests were buried in the earth and changed to coal. When coal is burned, it gives out the power which was stored up in the wood, changing water to the steam which drives the engine and the machinery attached to it. So that, after all, Mr. Ericsson has not invented or discovered a new power, but gone to the sun, the fountain head, for it, instead of drawing it from the reserved stores already contained in the earth. If this new arrangement can be successfully applied, it will work wonderful changes. The boy may now be living who will yet harness his balloon to a sunbeam and explore the ocean of air above us.

a storm of ridicule, and it remains to be decided whether fashion is strong enough to prevail against common sense and wit combined.

New Puzzles to be Answered.

No. 330. *Enigma*.—A certain article seldom shines, yet gives more light than the sun. It can be bought for a few cents, yet when spread in a certain way, is worth thousands of dollars. It has made thousands happy, broken many hearts, been concerned in innumerable business transactions, preserved the peace of nations, and caused many wars. Whoever looks carefully will see it now before his eyes. What is it?



No. 331. Illustrated Rebus.—A very sad fact.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the October number, page 373. No. 326. *Metagram*.—Plover, Blow, Glow, Flow, Slow... No. 327. *Law Question*.—Not guilty. By looking carefully you will see that Brown killed 13 Books, which certainly was not manslaughter... No. 328. *Illustrated Rebus*.—Laziness begins in cowbells and ends in chains... No. 329. *Enigma*.—A pump. The following have sent in correct answers to puzzles, Samuel Freed, Frank Bryant, Hubert S. Hixon, H. J. Crist, J. A. King, J. Milton Snyder, H. Dameron, P. J. Cuiet, W. L. Pettit, Ginnie Bailey, "X. Y. Z.," Hattie E. Hawley.

Practical Questions in Arithmetic.

No. 1. How many pages of reading may be accomplished in ten years, by devoting one hour a day to it? Try the experiment a few days, your friends, not to see how much can be got over, but how much can be thoroughly read so as to be understood and the leading ideas remembered. When it is known how many pages can be thus mastered per hour, it will be easy to calculate how much will be accomplished in ten years. Perhaps in ciphering it out, the total will prove so important that some thoughtful boys and girls will take the hint and secure the benefit of a valuable fund of information. Of course it is understood that instructive books, — travels, history, biography, works on natural science, etc., — shall be selected. No. 2.—What amount of self-control, real will-power, may be cultivated in ten years, by persistent and resolute self-denial, in some one particular, each day? The proper subjects to exercise in are those where one is in doubt whether they are right or best. Indulgence of the palate, of vanity, pride, and especially of anger, and its expressions, including all profanity, will give plenty of opportunities to exercise self-denial. Estimating by the rule given by the Wise Man, that "He who ruleth his spirit is better than he who taketh a city," ten years such practice would make a mighty man. It is a well-known fact in the lives of the great that self-mastery is the strongest element in mastering others.

Origin of the "Grecian Bend."

During a few months past the high fashionable world has given to the rest of mankind an exhibition of first class folly, called the "Grecian Bend." Our artist gives a pretty correct representation of an unfortunate female afflicted with it, and as he has been reading Darwin's works, he adds his ideas of how the curious monstrosity may have been brought about by "gradual development." It is one of the unexplainable mysteries how any one, with or without brains, could fancy the stoop and hump style to be graceful or attractive. It has justly provoked





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AN UNEXPECTED COLLISION. — Drawn and Engraved for the American Agriculturist.

Here is trouble enough for the youngsters who were having such a grand ride with their four-goat team. Their handsome, well-trained animals have been set upon by a lot of untamed, ill-bred street goats, the harness is broken, and the pets are suffering severely from the cowardly attack. We can all sympathize with the plucky fellow who rushes to the rescue, and belabors the vicious brute with his tiny umbrella. What could have provoked such a fierce attack? We have seen something like it among boys. The well-dressed and well-behaved are disliked by the ragged and the vulgar, who do not enjoy seeing others have what they do not possess. This is the hateful spirit of envy, that would drag others down to one's own level, instead of striving to rise to theirs. It is at the bottom of many of the quarrels and much of the mischief in the world. In a goat it may be less hateful, although even there it entitles the trespasser to a sound beating; but in a boy or girl, it is difficult to find any excuse for it. The best way to overcome it is by trying to bring one's self up to a desired position; this is praiseworthy ambition, one of the noblest motives that can inspire the soul.

Curious Work of Bees.

Some of the insects mentioned in the following account taken from Merry's *Musca* are very common in this country. Sharpen your eyes and spy them out while at work. "The poppy bee makes her nest in the ground, burrowing down about three inches. At the bottom she makes a large round hole, and lines it splendidly with the scarlet leaves of the wild poppy. She cuts and fits the pretty tapestry, till it is thick, and soft, and warm, then partly fills the cell with honey, lays an egg, folds down

the red blankets, and closes up the hole, so that it cannot be distinguished; and there, in its rosy cradle, with food to eat, and a safe nook to rest in, she leaves her baby bee to take care of itself. The leaf cutting bee makes her cells of green leaves, shaping them like thimbles. These little jars she half fills with rose colored paste of honey and pollen from thistles, lays her eggs, and covers the pots with round leaf lids that fit exactly. The mason bee makes its nest of mud or mortar. It looks like a bit of dirt sticking to a wall, but has little cells within. The mother bee does all the work, sticking little grains of sand and earth together with her own glue. The carpenter bee bores in posts, and makes its cells of sawdust and glue. The carding bees live in holes, among stones and roots, making nests of moss, lined with wax, to keep the wet out, with a long gallery by which to enter. They find a bit of moss, and several bees place themselves in a row, with their backs toward the nest; then the foremost lays hold of the moss and pulls it up with her jaws, and drives it with her fore feet under her body as far towards the nest as possible. The second does the same; and in this way heaps of prepared moss are got to the nest; others weave it into shape."

Agricultural Jokes.—It is desirable that farmers should increase the growth of useful plants, but it is poor policy to prop-a-gate with old rails and boards.—Although a man who attends sheep is properly called a shepherd, it does not follow that one who keeps cows is a coward, or that one who feds steers is a good steersman.—Knowledge is favorable to prosperity; even the swine will in most instances thrive best that nose the most.

Precision in Business.

Haney's Journal relates the following: On a certain Saturday night the clerks of the bank of England could not make the balance come out right by just one hundred pounds. This is a serious matter in that establishment—not the cash, but the discrepancy, however slight. An error in the balancing has been known to keep a delegation of clerks from each department at work sometimes through the whole night. A hue and cry therefore was made after this one hundred pounds, as if the old lady in Threadneedle street would be in the Gazette as an insolvent for the want of it. Luckily on the Sunday morning following the clerk—in the middle of the sermon, perhaps—felt a suspicion of the truth dash through his mind quicker than a lightning flash. He told the chief cashier on Monday morning that perhaps the mistake might have occurred in packing some boxes of specie for the West Indies, which had been sent to Southampton for shipment. The suggestion was immediately acted upon. Here was a race—lightning against steam, and steam with a start of forty-eight hours. Instantly the wires asked if such a vessel had "left the harbor." "Just weighing anchor," was the reply. "Stop her," frantically shouted the telegraph. It was done. "Have up on deck certain boxes, marked so and so, and weigh them carefully." They were weighed; and one, the delinquent, was found heavier by one hundred sovereigns than it ought to be. "Let her go," says the telegraph. The West India folks were debited with one hundred pounds more, and the error was corrected by the help of lightning, without looking into the boxes, or delaying the sailing of the vessel an hour.

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Send for a Circular, and compare prices before purchasing elsewhere.

BENEDICT BROTHERS,

Keepers of the City Time,

171 Broadway, cor. Courtland-st., New York.

WALTHAM WATCHES.

For a few months past we have advertised the above watches at extremely low prices, and the result has been most satisfactory. Our plan has been to sell the genuine WALTHAM WATCHES in Solid Gold or Coin Silver Cases only, and at a very small profit, giving the purchaser every opportunity of examination and comparison, and with the understanding that if the watch does not prove satisfactory, it may be exchanged or the money refunded.

These Watches are, without exception, the most perfect specimens of the art ever produced in any country. Each and every part is made by machinery of the most delicate and elaborate construction.

Compared with foreign watches, they possess many advantages, exceeding not only in principle and finish, but still more in their reliability as time-keepers. As an indication of the prices we submit the following:

Silver Hunting Watches, \$18.00
Gold Hunting Watches, 18 karat case, 80.00
Gold Hunting Watches, Ladies' size, 70.00

We often receive orders direct from our advertisement, but, for that every one should send first for our descriptive price list, which explains all the different kinds, tells the weight and quality of the cases, and gives prices for each. This we will forward to any one on application, and it will be found very useful in making a selection.

Every Watch is warranted by special certificate from the American Watch Co.

We send them by express to any address, allowing the purchaser to open the package and examine the Watch before paying, and it afterwards it does not prove satisfactory, it can be exchanged for the money will be cheerfully returned. Please state that you saw this in the *Agriculturist*.

Address, in full, **HOWARD & CO.,**
No. 619 BROADWAY, NEW YORK.

EARLY ROSE,

LOW, Send for Circular. Address J. H. FOSTER, Kirkwood, N. J., who grows 25 acres of Small Fruits.

CONTINENTAL LIFE INSURANCE CO. OF NEW YORK.

POLICIES ISSUED TO SEPT. 1, 1868, 9,054.

INCOME OVER \$2,000,000.00.



JUSTUS LAWRENCE, PRESIDENT.
J. HILTON SCRIBNER, VICE-PRESIDENT.
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PRINCE & COS. OF ORGANS AND MELODEONS. 43,000 now in use. BUFFALO, N. Y. CHICAGO, ILL.

RELIABLE AND RESPONSIBLE AGENTS wanted in all parts of the country for the Novelty 225 Sewing Machine. First class parties only are invited to correspond with S. E. H. VANDYKE, Gen'l Agent, 615 Broadway, New York.

\$99 WILL BE PAID TO THE MEDIUM. Clairvoyant, or ordinary mortal, who can read the Preface to HENRY C. WORK'S New Series-Comic Poem, **THE UPSHOT FAMILY.** Sent for 35 cents. Bound in crimson and gold, 75 cents. HENRY C. WORK, 615 Walnut-st., Philadelphia, Pa.

PENNA. STATE NORMAL SCHOOL, gives a thorough English education, **Cheap, Systematic, Practical.** Both sexes received. Address J. A. COOPER, Ellinboro, Pa.

RILEY'S EARLY RASPBERRY.—The earliest and best Raspberry known. The first to ripen. See the History, &c., see Circular of Novities. Send for (enclosing stamps) our "Manual of Grapes and Small Fruit Culture." Address J. H. FOSTER, Kirkwood, N. J., who has the **EARLY ROSE** potato for sale here, and also a full stock of Small Fruits.

MOUNT LEBANON GRAPE.—A New and valuable variety. Send for our circular of Novities, which gives history, description and testimonials. Oriented with the Society of Shakers, Mt. Lebanon, N. Y., and by them placed in our hands for propagation. Address J. H. FOSTER, Kirkwood, N. J. We have a complete stock of all Small Fruits. Send stamps for our "Manual of Grapes and Small Fruit Culture."

PROSSER RASPBERRY.—Sometimes (but improperly) called Burlington. We warrant our stock genuine. It has all the necessary qualities to place it fully as high as the Clarke, which is well known to be the best variety. Send for our circular of Novities. A full stock of all kinds of Small Fruits. Send stamps for our "Manual of Grapes and Small Fruit Culture." Address J. H. FOSTER, Kirkwood, N. J.

WHITE CLUSTER BLACKBERRY.—A superb berry to all sections. Send to us to make up a standard fruit. Of a beautiful Cream color. Perfectly hardy and vigorous. For history, description, and testimonials, send for our *Journal Circular.* Address J. H. FOSTER, Kirkwood, N. J. Send stamps and get our *New Manual of Grapes and Small Fruit Culture.*

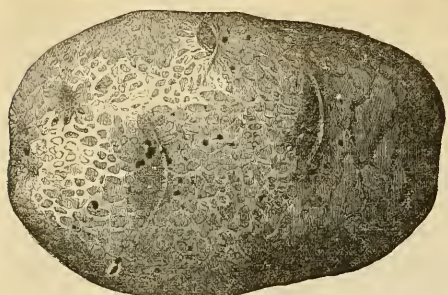
MUNSON'S COMPLETE PHONOGRAPHER.

One volume, 12mo, cloth. Price \$2.

"I received the COMPLETE PHONOGRAPHER on the 20th of April, and without teacher, or any previous knowledge of phonography, by devoting for a greater part of the time only one hour a day to the study, was able to report a sermon verbatim on the 12th of the following September. S. S. GILSON, Teacher of Theology at the Theological Seminary, Allegheny City, Penn.

Sent by mail, prepaid, on receipt of price. OAKLEY & JASON, Publishers, New York.

WANTED.—Agents to sell the Lightning Trap. A new and wonderful invention. It kills Rats, Snakes, Gophers, &c., throws them away and sets itself as quiet as its name indicates. Address **LIGHTNING TRAP CO.**, 95 Mercer-st., New York.



EARLY ROSE POTATO.

Be Sure and Get the Genuine.

B. K. BLISS & SON,

Nos. 41 PARK ROW and 151

NASSAU ST., NEW YORK,

(LATE OFFICE OF AMERICAN
AGRICULTURIST.)



TRADE MARK

The above engraving is from a photograph taken from life of D. W. RAMSDALE, originator of the Norway Oats.

MORE TESTIMONIALS.

Light Street, Pa. Sept. 24, 1893.

I write to say that I am greatly pleased with the Norway Oats I received from you last spring. They yielded at the rate of sixty bushels to the acre, stood up well, straw good and heavy. Our common oats on same ground gave us only 20 to 30 bushels. My neighbors laughed at me for paying such a price for seed, but now the laugh is on the other side of the face. The season has been the poorest for oats I ever knew of. Send me a few of your printed histories of this grain, and I will distribute them willingly.

Truly Yours,

H. H. BROWN.

W. H. Tyler, Guilford, Vermont, says:

The Norway Oats are a great improvement. They grew very heavy, with numerous stalks, and yield fully three times as many as any oat we have ever raised in this section. I shall preserve all my seed for next season, and I am satisfied they will take the place of all others.

From J. R. Cloud, Union Village, N.Y.

They are far superior to any I ever saw in every respect. No farmer can afford to raise any other kind if he can get this seed.

Oscar E. Sargent, Chesterfield, N. H. says:

Those Norway Oats recommend themselves to all who see them growing. They are certainly a superior grain.

From J. C. Orne, Willowhatch Lake, N.Y.

The Norway Oats I had of you have proved to be as good as you represented them to be in every respect. They are far more profitable to raise, and all farmers will do well to procure them at the first opportunity.

From Wm. Danforth, South Durie, N.Y.

Those Oats have done remarkably well. From the 100 seeds I had, it is estimated by my neighbors that I will have a yield of from six to eight quarts. They are regarded as a miracle by all who have seen them.

The Norway Oats have received the highest prize at many of the State and County Fairs throughout New England, and from the thousands of farmers who have grown them the past season, we have already received over one thousand letters of recommendation. Probably no improvement in the interest of agriculture has ever received such universal and hearty endorsement, as has been accorded to this grain. A full history will be mailed to all who desire it. Farmers will be furnished with this seed until further notice, at the following rates:

One quart, post-paid.....	\$ 1.25
Two quarts.....	2.00
One peck, by express, charges to be paid on delivery.....	4.00
One bushel.....	6.00
One bushel.....	10.00
Two and one-half bushel bags.....	25.00

Remittances should be in checks, drafts, post office orders, or in money, by express or registered letters. In order, tag, give your post-office address, also state nearest express office, if to be sent by express.

As to our responsibility, we refer to the following well-known parties:

Messrs. HARRIS & BROTHERS, New York.
G. COLLAMORE & CO., 731 Broadway, New York.
C. A. STEVENS & CO., 40 East 14th St., New York.
Write our address plainly on the envelope, and always put our box number on, as well as our place of business, as follows:

JONES & CLARK,
No. 20 Liberty Street, New York,
P. O. Box 5699.

We offer for sale a fine stock of this valuable Potato, grown expressly for us from the original stock.

The experience of the past season fully confirms all that we stated in favor of this variety when we first offered it for sale last spring. Well-ripened tubers have been exhibited, grown in eight weeks, in the open ground, and we have abundant testimony from many growers proving it to be from two to three weeks earlier than any other variety of superior quality, and enormously productive, yielding from 400 to 500 bushels to the acre.

A Silver Medal has been awarded us by the Massachusetts Horticultural Society, and special prizes at various other State and County Agricultural Societies, which, with the many favorable reports received from our customers in various parts of the country, authorize us in recommending it as the earliest, most productive, and best flavored variety in cultivation. It is particularly recommended for culture in the Southern States, as new potatoes of this variety can be sent to the New York market as early as the more common varieties from Bermuda.

The following from a few of our correspondents will confirm what we have said.

Messrs. B. K. Bliss & Son—Gentlemen: I have this day tried on my own table, the Early Rose Potato. I find it to be of the first quality, and have no hesitation in pronouncing it one week or more earlier than the Goodrich Early, and quite as productive.
Yours as ever,

Messrs. B. K. Bliss & Son: The Early Rose Potatoes are dry, mealy, and of excellent flavor; in fact, the best early potato I have ever eaten, and I have tested most of the varieties for many years.
Yours Respectfully,

Messrs. B. K. Bliss & Son: I planted nearly a peck of Early Rose Potatoes this spring. They have fully answered my expectations, being large, fair, productive, early, and of good quality. I had no means of exact comparison with the Goodrich, but am satisfied that they are decidedly earlier.
Truly Yours,

One Pound, \$1. Three Pounds, \$2, by mail, post-paid.
One Peck, \$5. Half Bushel, \$3. One Bushel, \$15.
One Barrel, \$40.—50 lbs. to the bushel, 165 lbs. to the barrel.

Cash to accompany the order. Price to the trade in larger quantities will be given upon application.

Caution.—In consequence of the great demand for this variety last spring, a spurious variety, which strongly resembles the Early Rose, has been introduced into the market. Every respect, was widely disseminated, and will doubtless be offered again this fall. Beware of spurious varieties.

In consequence of the danger from frost in spring, all potatoes designed for early planting should be ordered in the fall. Potatoes will be delivered at the Express Offices, Boats, or Railroad Depots in New York City free of charge.

We also have on hand a large stock of Early Goodrich, Sovereign, Dykem, Harrison, and other leading varieties, at lowest market prices, a Descriptive Priced List of which will be mailed to all applicants enclosing ten cents.

B. K. BLISS & SON, Box 5, 712, P. O., New York City.

LILIUM AURATUM.

The Japanese Queen of Lilies.

We have a fine stock of this gorgeous Lily in splendid condition, many of which are of a larger size than any hitherto offered. A correspondent of the *London Times* has the following remarks regarding this, the most magnificent of modern floral introductions: "*Lilium auratum*—This golden-rayed Queen of Lilies is the most beautiful of the Lily family. It is perfectly hardy, and for the adornment of the Flower-garden, the Conservatory, and the Sitting-room, it is unrivalled. The whole English floral world, on its introduction, was jubilant with delight, hailing its advent as an astronomer would the discovery of a star of the first magnitude; and in every city, both in Europe and America, it has received ovations such as would have been dear to the heart of the most ambitious prima-donna or the most successful conquering hero."

Specimens were exhibited the past summer in England, 6 to 8 feet in height, with from 30 to 75 flowers. It is perfectly hardy—having stood out the past winter in Massachusetts, with a slight covering of straw. A beautiful two-page lithograph, colored true to nature, will be found in our new Bulb Catalogue—which will be mailed to all applicants enclosing ten cents.

Flowering roots securely mailed to any address upon receipt of price.

Extra size, \$4.00 each. No. 1, \$1.50 each; \$12 per dozen. No. 2, \$1.00 each; \$9.00 per dozen. A liberal discount to the trade.

B. K. BLISS & SON,

41 Park Row, & 151 Nassau-st., New York.
P. O. Address, Box 5, 712 New York.

Early Rose Potatoes.

By mail, post-paid, without danger of being bruised, being carefully packed in

Wardwell's Patent Wooden Boxes.

One pound, \$1; Three pounds, \$2. Having a good supply, we also send them without charge as premiums to those purchasing our Garden Seed in packets.

Seedlings, Market Gardeners, and Farmers, who want Beans, Peas, Corn, and Potatoes, &c., the very best varieties by the bushel or barrel, may save from 10 to 30 percent by purchasing of us this fall. Send for Circular. Address: WARDWELL & CO., West Dresden, Yates Co., N. Y.

Seed Potatoes.

Harrison, \$6 per bbl.; \$50 per ten bbls.; Early Rose, Early Goodrich, Sebce, and all other valuable varieties at low prices. Address: REISIG & HEXAMER, New Castle, Westchester Co., N. Y.

5,000,000 Hop Plants for sale.—Genuine English Cluster. For prices and Circular send stamp to R. FRANCE, Cobleskill, N. Y.

Dutch Bulbous Flower Roots.

Sent by Mail, Post-paid, at Catalogue Prices.

B. K. BLISS & SON,

No. 41 Park Row, & 151 Nassau-st.,

New York,

(Old Office of the American Agriculturist.)

Offer for sale a large and well selected assortment of the above, including all the most desirable varieties in cultivation.

Collections containing a fine assortment of all the leading varieties of the above will also be mailed post-paid, as follows: Collection No. 1, \$30; No. 2, \$10; No. 3, \$5.00; No. 4, \$3.00. For the contents of each collection and further particulars, see Catalogue.

Also a fine assortment of GREEN-HOUSE BULBS, containing CYCLAMENS, IXTAS, OXALIS, SPARAXIS, TRITOMAS, ACHIMENES, GLOXINIAS, &c., &c.

Particular attention is invited to their

New Illustrated Autumn Catalogue,

(containing an accurate description of each variety, with particular directions for culture, so that any person, however unacquainted, cannot fail to succeed, also a beautiful colored lithograph of the celebrated *Lilium auratum*), which will be mailed to all applicants enclosing ten cents. Orders may be addressed to B. K. BLISS & SON, Box 5, 712, P. O., New York.

IMPORTANT TO GARDENERS!

BUY THE BEST.

Fresh and Genuine Wethersfield Garden Seeds, New Crop, 1893.

Grown from choice stocks expressly for the Market Gardeners' Trade. Orders will receive careful attention. Our new Fall Catalogue sent free to all applicants.

R. D. HAWLEY,

Seed Grower and Dealer, 492 and 498 Main-st., Hartford, near Wethersfield, Conn. Established 1842.

PLANTS AND SEED POTATOES FOR SALE.

Blackberries, Wilson Early, \$10 per 100; Root Cuttings, \$3 per 1,000. Kittington, \$5 per 100; Root Cuttings, \$5 per 1,000. Raspberries: Philadelphia, \$10 per 100; Clarke, \$11 per 100. Potatoes: Early Rose, 75 cents per lb. Early Sebce and Harrison, \$3 per bushel; Early Goodrich, Gleason, Monitor, and White Peachblow, 10 cents per bushel.

SAMT. C. DE COU, Recklesstown, Burlington Co., N. J.

Norway Oats and Grape Vines.

Having made arrangements with Messrs. Jones & Clark for a supply of their Norway Oats, I will send out small quantities as premiums to those purchasing any of my grape vines. Great inducements to parties getting up clubs. See my other advertisements and send for price lists. Address

Richmond P. O., Staten Island, N. Y.

JAPAN LILIES and Hybrid Gladiolus FOR THE MILLION.

PRICES GREATLY REDUCED; also LILIA MAURATUM.

Nurserymen and Dealers supplied much below cost of importation. Prices on application to

J. M. THORNBURN & Co.,
15 John Street, New York.

100,000

Ives' Grape Vines. Send for Price List to
J. W. CONE, Vineland, N. J.

WILLARD and EARLY ROSE.

Mr. C. W. Gleason, of Mass., one of the three gentlemen to whom the late Mr. Goodrich was accustomed to send out his new seedling potatoes for testing before introducing them to the public, and of whom he named his Gleason potato, has for years probably been more largely engaged in raising new seedling potatoes than any man in New England. Last spring he purchased of him the entire stock of his "Willard" seedling (a seedling from the Early Goodrich), which he considers the best of all the hundreds of seedlings he has this winter raised. "Willard" proves to be enormously productive and is a potato of great promise. I now offer to send one potato of this new seedling, gratis, with every peck of Early Rose; five with each bushel, and sixteen with each barrel.

My stock of Early Rose was procured directly from the original grower, and is warranted TRUE. My rates this fall are:

One Pound, postage paid, \$1.00 One Peck, \$5.00

Three Pounds, " " 2.00 One Bushel, 15.00

One Barrel, " " 100.00

Each Bushel warranted to contain 165 lbs.

A discount on large quantities.

Early Goodrich per Barrel \$5.70 Harrison \$7.00

Early Selkirk " " 5.00

Early Selkirk " " 5.00

JAMES J. H. GREGORY, Marlborough, Mass.

WOLF CREEK NURSERY.—60,000 Cherry, (50,000 E. May), 20,000 Peach, Apple and Pear, Standard and Dwarf, 30,000 Apple Stocks, extra Pear and Quince Stocks. A variety of Trees and Plants. Our E. May Cherry is (we think) the finest in the world. Come and see, or get Catalogue free. JOHN WAMPELLE, Troutwood, Ohio.

JOHN R. & A. MURDOCH,
NURSERYMEN, FLORISTS AND SEEDSMEN,
112 SMITHFIELD STREET, PITTSBURGH, PA.
Offer for sale the largest stock of FRUIT and ORNAMENTAL TREES in Western Pennsylvania, embracing
15,000 Apple, Dwarf and Standard, 2 to 4 years old.
2,000 Standard Pear, 1 to 3 years old.
6,000 Dwarf Pear, 1 to 2 years old.
10,000 Standard Cherry, 1 to 2 years old.
5,000 Dwarf Cherry, 1 to 2 years old.
10,000 Peach, 1 to 2 years old.
1,500 Plum, 2 to 3 years old.
5,000 Choice ROSES.

Also, EVERGREENS, SHADE TREES, GRAPE VINES, CURTAINS, GOOSEBERRIES, STRAWBERRIES, GREEN-HOUSE PLANTS, &c.
Catalogues sent on application.

EARLY ROSE POTATOES. 50 cents a pound, \$1.75 per bushel, \$4.00 per bbl. Harrison Potatoes 25 cts. a pound, \$1.75 per bushel, \$4.00 per bbl. Send for Catalogue of Potatoes, Small Fruit, &c.
THOS. G. ANDREWS, Moorestown, N. J.

Geneva Nursery.

300 acres in different stages of growth. FRUIT AND ORNAMENTAL TREES.

Seedling Stocks, Grape Vines, etc. Standard and Dwarf Apple, Standard and Dwarf Pear, Standard and Dwarf Cherry, plenty of Early Richmond, Plum, Trees, 2-year old fruit, 3-year old, Nectarine, Blackberries, a fine stock of Missouri Mammoth, Wilson's Early, Kittatiny, and other Small Fruits. Send stamp for Trade List.
W. & T. SMITH, Geneva, N. Y.

Wilson's Early Blackberry.—3,000 extra plants to be sold previous to Nov. 15. The highest cash offer takes them. GEO. H. LAMBERT, New Brunswick, N. J.

1,000,000 of Choice Grape Vines

of all leading varieties, 3,000,000 of Grape Vine Cuttings, and a great supply of Currants, Gooseberry, Raspberry, and Strawberry plants, cheaper than anywhere else, for sale. Send for Price List and Essays, with stamp.

DR. H. SCHROEDER,
Bloomington, Illinois.

IF YOU WANT to buy one doz., 100, 1,000, or 10,000 Wilson's Early Blackberry, Philadelphia Raspberry, or other Small Fruit Plants true to name, of the best quality, at very low prices, please address (with stamp) to

DAVID BAIRD, Mazonia, Monmouth Co., N. J.

30,000 IVES GRAPE ROOTS. 1st class, 3 year-old, 30,000 Ives and various, 1st class, 1 year-old.

J. B. BELVILLE & SONS,
Nurserymen and Small Fruit Growers,
Mt. Washington, Hamilton Co., Ohio.

100,000

Fine Ives Grape Vines, at less than market rates.
J. W. CONE, Vineland, N. J.

Goodrich Seedling Potatoes.

Get Them True to Name.

I had the entire stock of Seedling Potatoes left by the late Rev. C. E. Goodrich, and was the first to send out the Early Goodrich, Collier, Gleason, and Early Rose.

Will take orders until Dec. 1st, unless previously sold, as follows:

	Peck.	Bush.	Bbl.
Early Goodrich, each.....	\$1.00	\$3.00	\$30.00
Gleason and Talco, each.....	1.00	3.00	30.00
Seedling No. 30, early, round, white.....	1.00	3.00	30.00
Harison.....	1.00	3.00	30.00
Early Rose, &c.....	\$1.00	\$3.00	\$30.00
Also, Shiner, Fanny & Early Selkirk, each.....	1.00	3.00	30.00

Have but few barrels of Early Rose.
D. S. HEEFORD, Utica, N. Y.

APPLE SEED.—A few bushels prime seed of the growth of 1862, for sale by
JAMES A. ROOT, Skaneateles, N. Y.

CATALOGUES SENT FREE.

M. O'KEEFE, SON & CO..

Importers and Growers, Wholesale and Retail Dealers in Flower and Vegetable Seeds, Dutch Bulbs, Fruit Plants, Ornamental Shrubs, Roses, &c.
Ellwanger & Barry's Block. Rochester, N. Y.

Ives Seedling Grape Roots.

This valuable grape should be planted by all. We are now selling selected roots at \$1.50 per doz.; \$7 per 100; \$50 per 1,000.
J. M. McCULLOUGH & SON,
Cincinnati, Ohio.

Adirondack Grape Nursery & Vineyard.

Superior Vines of 1, 2, 3 and 4 years of Adirondack, Allen's Hybrid, Concord, Creveling, Delaware, Diana, Hartford, Iowa, Isabella, Maxatiny, Miles, Rebecca, Rogers' Hybrid, 1, 2, 3, 4, 8, 15, 19 and Sherman, Telegraph, Union Village, Martha, Salem, and Diana Hamburg. Also, Foreign varieties. Catalogues sent on application.
JOHN W. B. BAILEY,
Plattsburgh, Clinton Co., N. Y.

LUM'S EVERBEARING RASPBERRY.—A fine and stock of the most valuable variety at great reduction from former prices. Small fruits a specialty. Prices low. Send for Catalogue. Address
H. B. LUM, Sandusky, Ohio.

AT REID'S NURSERIES, Elizabeth, N. J.—A large stock of Fruit and Ornamental Trees, Evergreens, Shrubs, Hedge Plants, &c., occupying 30 acres. Will be cleared this fall, for sale at low prices. Catalogues containing list of varieties of Fruits, &c., &c., with prices annexed, forwarded on application. N. B.—Large stock of Kittatiny Blackberries, two years old, strong, at low rates. Address
DAVID D. BUCHANAN,
Successor to Wm. Reid.

Philadelphia Raspberry Plants for sale, \$,000 or 10,000 Plants at \$10 per 100; \$40, 500; \$75 per 1,000. Cash sent with order. THOS. WHITWELL, Hyde Park, N. Y.

500,000 First-class APPLE STOCKS.—Every one wishing to start a Nursery should send at once for our list. We have many things you want. JOHN WAMPELLE, Troutwood, Montgomery Co., Ohio.

Wilson's Early Blackberry, Philadelphia and Clarke Raspberry Plants by Mail,

postage paid. Wilson's Early, one dozen, \$3; two dozen, \$5. Clarke Raspberry, same rates. Philadelphia Raspberry, one dozen, \$1.75; two dozen, \$3. Wilson's Early and Philadelphia plants at very low rates when ordered by quantity. Having had 20 years experience with my father, (since Pallen deceased), purchasers may rely on all plants being of the best quality, true to name, and securely packed. PEACH PITS, growth of 1862, by the bushel or barrel. Address
W. H. H. PULLEN, Hightstown, N. J.

RASPBERRIES, BLACKBERRIES, ROSES, Grape Vines, Evergreens, etc. Send for a Catalogue. MAHLON MOON, Morrisville, Bucks Co., Pa.

GRAPE VINES, ETC., and the Agriculturist. See my other advertisements and send for Circulars. Address
R. K. MEISSNER,
Richmond P. O., Staten Island, N. Y.

WANTED every reader of the *American Agriculturist* who intends to plant small fruits or potatoes, and those who purchase small quantities to send by quantity, one of my fall Catalogues before purchasing elsewhere, as my stock is genuine and first-class, and the prices from 10 to 20 per cent cheaper than are advertised in this paper. Early Rose, 50 cents per lb., post-paid, low by the bushel or barrel. Also, Peach Trees very low.

THOS. G. ANDREWS, Moorestown, N. J.

JOHN S. COLLINS, Moorestown, N. J., has 175 plants in berries, and is raising his own vines, and can and does fill orders to satisfaction of buyers, at short notice, with plants true to name.

CURRENT CUTTINGS.

About 9 inches long, good and strong, best varieties, Cherry, La Versailles, Dutch, Dutch, White Grape, Victoria, Black Sapling, &c. Also, Grapes, or Any of Quince, American Seedling Gooseberry, &c. 24 cuttings, 4 varieties, (6 of each) for \$1.50.
WARDWELL & CO., West Dresden, Yates Co., N. Y.

WILLOW DALE NURSERIES & FRUIT FARM Great inducements offered to Nurserymen and others wishing to plant for themselves. A general variety of nursery stock, including 40,000 Peach Trees and a large stock of Small Fruits. Packing done in the best manner. Catalogues sent gratis to all applicants. Address: E. B. STRAW & PYLE, Kennett Square, Chester Co., Pa.

TO CLUBS.

The best offers yet made to those purchasing grape vines, etc., and getting up clubs are those of G. K. MEISSNER. See his recent advertisement in this paper, and send for Circular. Also his other advertisements for this month. Send for price lists. Address
R. K. MEISSNER,
Richmond P. O., Staten Island, N. Y.

WAIT and get our prices before buying any Grape Vines, Strawberries, Raspberries, &c. Immense stock, and great inducements offered to buyers. Correspondence solicited. Catalogues free. C. E. & J. S. FRITTS, Atlantic Small Fruit Nurseries, Elwood, N. J.

Darison's Thornless Black Cap Raspberry.

Get your plants of the first disseminator, who propagates only from selected stock. For details, send for Circular, etc., and send stamp for circular to JOSEPH SINTON, Anzola, Erie Co., N. Y.

Also, Strawberry, Raspberry, and Blackberry Plants.

JOHN S. COLLINS, of Moorestown, N. J., has 100 acres planted in Wilson Early Blackberry; has 100,000 plants to sell, all raised direct from the Old Plant. He has other Plants all for sale cheap, quality considered; see prices on page 582, last No., others in Price List, which will be sent to any address.

PAINTS FOR FARMERS and others.—The Grafton

Mineral Paint Co. are now manufacturing the Best, Cheapest, and most Durable Paint in use; two coats well put on, mixed with pure Linseed Oil, will last 10 or 15 years; it is of a bright brown color, and does not become discolored or changed to green, lead, stone, drab, olive or cream, to suit the taste of the consumer. It is valuable for Houses, Barns, Carriages and Cattle, and is also used by the Navy. Agricultural Implements, Canal Docks, Vessels and Ships' Bottoms, Canvas, Mergel and Shingle Roofs, (it being Fire and Water-proof), Floor Oil Cloths, and Manufacturers having used 5,000 bbls. (the past year), and as a paint for any purpose is unsurpassed for body, durability, elasticity, and adhesive power. Price 45 per bbl. of 300 lbs., which will supply a farm for years to come. Warranted in all cases as above. Send for Circular, which gives full particulars. Genuine genuine in every brand in the trade, call on Grafton Mineral Paint Co. Persons can order the Paint and remit the money on receipt of the bill.

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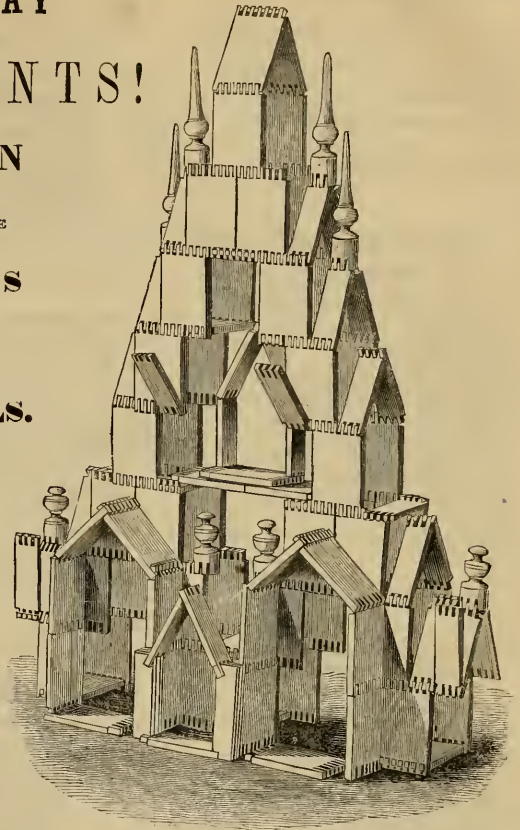
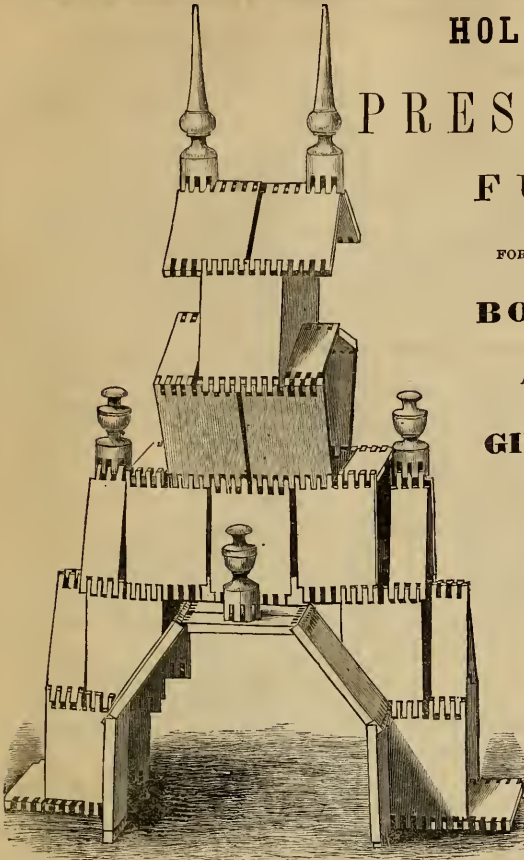
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VOLUME XXVII.—No. 12.

NEW YORK, DECEMBER, 1868.

NEW SERIES—No. 263.



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GROUP OF FANCY PIGEONS.—Drawn and Engraved for the American Agriculturist.

In the April number is a picture of pigeons of very dissimilar forms. Those represented in the above engraving are most interesting for their variations in plumage. The *Fan-tail* stands entirely alone in its singular beauty. The tail is constantly expanded, the will of the bird influencing it but a little. In the best specimens there are upwards of 28 feathers in the tail, and 36 to 40 feathers are not unusual among high-bred birds. *Jacobins* are small pigeons, with the feathers of the neck so ruffled and reflected forwards as to give the

appearance of a monk's cowl partly thrown back. *Sedlons* have the wings, the upper mandibles of the bills, and the feathers of the feet, dark, and the rest of the plumage white. Some have a white hood, or "turn-crown." *Nuns* are remarkable for the brilliant contrasts of color, the head and throat, with the wings and tail, being black, while the rest of the plumage is brilliantly white. Some kinds are distinguished by a tuft, or turn-crown, rising like a shell at the back of the head. *Trumpeters* are good-sized pigeons, of various colors, having a

shell-like turn-crown, a rosette on the top of the head, and extravagantly feathered feet. The voice is peculiar, the coo being prolonged, making the name appropriate. The *Letz* resembles the foregoing in plumage somewhat, but does not trumpet. *Priests* are of different colors; black ones, with white heads and white wing-bars, are highly prized. The *Tumblers*, among the most interesting of fancy pigeons, turn summersets on the wing; one kind is marked by snow-white throat-feathers, called the *beard*; others differ in characteristics and plumage.

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Back Volumes Supplied.—The back volumes of the *Agriculturist* are very valuable. They contain information upon every topic connected with rural life, out-door and in-door, and the last ten volumes make up a very complete library. Each volume has a full index for ready reference to any desired topic. We have on hand, and print from electrolyte plates as wanted, all the numbers and volumes for ten years past, beginning with 1857—that is, Vol. 16 to Vol. 26, inclusive. Any of these volumes sent complete (in numbers) at \$1.75 each, post-paid, (or \$1.50 if taken at the office). The volumes, neatly bound, are supplied for \$2 each, or \$2.50 if to be sent by mail. Any single numbers of the past ten years will be supplied, post-paid, for 15 cents each.

AMERICAN AGRICULTURIST.

NEW-YORK, DECEMBER, 1868.

Winter is here! short days grow shorter, cold ones colder. We seek our pleasures indoors, as a rule, and our labors, as farmers, are chiefly those incident to the season, and wherever performed, have only an indirect reference to the soil. Long evenings invite to reading and study; to the laying out maps of the farm, and plans of the labors to be undertaken next summer; of improvements to be set on foot upon the homestead, or for benefitting the public. They offer also an invaluable opportunity for looking over the labors of the past year, going over the accounts, taking an inventory of stock and property of all sorts. The farmer has a multitude of subjects to interest himself in, and it is worth a great deal to any young farmer to take up some one specialty, and devote himself so thoroughly to it that his knowledge upon it will be far in advance of his neighbors'. For instance a young man may take up sheep and wool, and find in them material for a lifetime of study and experiment, and the more he knows of what other people have done and thought, the more profitable will he be able to make his own knowledge. Almost every department of farming offers similar subjects. Breeding, and feeding for milk, swine, poultry of various kinds, fish culture, and forest tree culture, are some very attractive objects of study, and a score might easily be named. There is no surer or pleasanter road to fame, and to the real respect and honor of the best men in the country than that by which a man becomes an "authority" on any important subject connected with Agriculture.

Farmers' Clubs.—If one is not in active operation in the neighborhood, it will pay to start one in most genuine farming communities. One good active young man, who knows what he wants, will generally do the work, and the whole burden of keeping up the interest will have to be sustained by half a dozen people. Hence such an undertaking goes easier and takes better if connected with some social entertainment at which the wives and daughters of the farmers may be present, or if coupled with a circulating library of books and periodicals, and with a system of exchange and distribution of choice seeds, that more may take a personal interest in it, and in having the meetings well attended.

The year now drawing to a close has been remarkable for unusually prolonged and severe cold, extending far to the southward, and doing considerable damage to some fruits, especially to the peach, blackberry, and raspberry crops, now of so much importance; for an exceedingly late and cold spring especially delaying farm work, which is usually done in May and pushing it into June; for a late, but, on the whole, propitious summer, causing crops to mature in a very short time, and giving us fair harvests of the great staple crops, and a very large yield of grass and hay. The prevalent character of the summer was, however, cold and wet over a large portion of the Union, and it has been the almost universal observation that so many weeds were never seen before. This entails additional labor upon all tillers of the soil for the coming year. The time of ripening for our cereal, Indian corn, was by the nature of the season very short, and though the summer was cold, frosts came so early as to seriously damage the crop of both grain and fodder in numerous districts. The same cause, early frosts, also blasted the prospects of an unusually favorable grape crop. The prices of agricultural produce have ruled very high, as indeed they have for several years past, and we may rejoice (not without the fear that this favorable state of things will not last,) that the farmers are about as well paid as other classes of producers. The partial failure of the hay and root crops of Europe has led to the exportation, to some extent, of these articles. A remarkable and fatal murrain has been observed among our market cattle, originating among Texas droves, but affecting those chiefly which follow or associate with them.

The agriculture of the Southern States is gradu-

ally improving, and the great labor problem is undergoing solution. A condition of political anarchy is not favorable to agricultural development; nevertheless, men must be fed and clothed, and as both food and clothing are derived directly or indirectly from the field, man's necessities force upon him attention to the farming interests. We may continue to hope, therefore, that the magnificent resources of this section of the Union will before long be thoroughly developed.

Hints about Work.

Buildings.—Protect cellars against the frost, by banking up earth against exposed and thin foundation walls. Stop windows, except well-glazed ones, with straw litter, protected by stakes on the outside, to prevent hens scratching it all about. Pumps, cisterns, hydrants, and water-pipes need similar protection if exposed. Horse manure and litter is better than any other packing we know of to keep frost out of water-pipes. It is a good thing to line stables which are against the sides of old buildings, with strips of board tacked on so that swamp hay or straw can be stuffed in between them and the weather-boarding. It makes them much warmer, and saves fodder in proportion.

Ventilation.—Close stables may be warm, but without ample provision for ventilation they will be unhealthy. The stock will be found "off their feed," and ailing in various ways. With sufficient ventilation, which is easily secured, warmth and healthfulness are entirely compatible.

Chaffing, Soaking, Steaming Fodder.—The economy of the cutting-box is very generally admitted nowadays, and with chaffing hay, and straw, and stalks, comes soaking as a matter of course. The expense of steaming fodder leads many of us who do not feel as if we could afford a Prindle's steam boiler, to devise our own reasons why we and our cattle are just as well off without, while, nevertheless, all who do use steam are loud in praise of its economy. We have not come to grinding hay yet, but that will be the next step, in all probability, for its advantages have been asserted in Europe.

Roots.—Feed sliced, chopped, or mashed, in such pieces that a cow or "young critter" will not choke itself. It is rarely best to feed more than 4 quarts of carrots a day. Their highest effect is observed when fed with other roots, grain, etc. Common turnips are the first roots to be fed, as they soon grow pithy and lose much in value.

Foddering.—If any reader of the *Agriculturist* continues the wasteful practice of foddering upon the ground around stacks or in the barn-yard, we entreat him to stop it. Put up temporary racks, under cover if possible, and check this great waste.

Live Stock of all kinds should be looked to daily; they should be fed and watered with the regularity of clock-work. The card, brush, and curry-comb will, if frequently used, not only promote health and cleanliness, but effect a great saving of fodder, while at the same time the paradox of sharpened appetites will be observed. A well-cleaned ox, whose skin has its pores thoroughly opened twice a week by the friction of the brush and card, feels well, and will eat coarser fodder with a better relish than an uncleaned one, and eat it cleaner, and it will do him more good. All kinds of stock should have salt before them, so that their natural craving may be satisfied. Salt and ashes is a good mixture, and a few sods, thrown where animals can work them over, will be mumbled and chewed often with a relish which makes it evident that it is no unnatural appetite, but that they get something which the pastures would supply in summer, and which their systems need equally in the winter.

Cows.—Do not dry off for the mere sake of saving labor. It is injurious to the milking qualities of both the cows and their female offspring. The milk-giving tendency should be encouraged to the utmost if milk is an object with the breeder. Feed well, whether cows are in milk or dry.

Oxen, if worked, should be kept sharp-shod, and **Young Stock** should be maintained constantly growing, and not exposed to the weather, if simply

for the sake of economy of fodder and in the production of manure. We have repeatedly said, pine lumber is a great deal cheaper than hay as a means of warming stock, for fodder is little besides fuel, to maintain the internal heat in exposed animals.

Horses.—We do not believe in keeping horses as warm as other stock in the winter. Always rub down and blanket one that comes in wet or tired. Never expose a horse to drafts of air, or let him stand in the wind, if it can be helped, and if obliged to leave horses in the wind always blanket them. In the stable, pull off the blanket soon after a horse is cooled off. A horse ought to have a good portion of hay daily. High feeding without it gives him a neater barrel, but it is unnatural diet, and of course less healthful. The good grooming and regular care and exercise of city horses, and those fed in the same way, make good in a measure the defects of this diet, while farmers' horses, that live on dry hay and corn stalks the winter through, and are only brushed off a little, to get the hay seed out of their foretops, Sundays, remain healthy (if they do) on account of their more natural fare.

Swine.—As a rule, kill family pork when the weather becomes cold enough. It requires so much more feed to make a pound of pork in cold weather than when it is mild, that it will not pay to continue the fattening. Market hogs, if they have warm quarters, may be held for a short time if the markets are crowded, but it generally pays better to hold pork for a few days rather than swine, if the weather be cold, so that it will keep well.

Sheep.—Feed so as to keep them gaining; if fattening, feed pretty freely, being careful that none get too much, and none too little grain. A sheep overfed a few days is apt to get seriously off its feed and run back so that it will hardly recover its former stand all winter. Litter the yards freely.

Work in the Horticultural Departments.

By the Almanac, this month closes the year. To the horticulturist there is no such abrupt division of time; each month is linked with that which preceded it, and with that which shall follow, and at present he is much more inclined to look forwards than backwards. It is always well to look back a month or two and see if our notes do not suggest something that has been left undone—or forward a month, which will require turning to last January's number, to find if matters are not indicated there which can be more favorably done now than at any other time. While we would not disregard the lessons of our successes or our failures, we mainly look towards the New Year in our plans for work. Snows and bad weather stop out-of-door labor, and we congratulate ourselves that at this season there is time to read, and think, and discuss.

Orchard and Nursery.

Wherever the condition of the soil will allow, manure, plow, and subsoil, and prepare for planting.

Heeled-in Trees should be made all safe for winter. If there is any danger of water settling around the roots, make a ditch to carry it off, and if, in the hurry of heeling-in, the roots were not thoroughly covered, bank them up well with earth. Put no straw or other litter over the limbs, to harbor mice.

Domestic Animals often do much damage to trees, especially young ones. Good fences and well-closed gates are a preventive against these, as well as those human vandals who think it their right to disregard roads when there is snow on the ground.

Mice.—Various devices have been given to keep off these vermin—wrapping the tree with cloth or tarred paper, or surrounding it by a cylinder of tin, sheet iron, or two horse-shoe tiles, and putting a mound of earth around the tree about a foot high. If the soil of the orchard is light, clay or stiff loam is sometimes carted on for the purpose. Clear away weeds and litter of all kinds from around the tree, and if the earth protection is used, trample the snow hard after each fall.

Rabbits.—Use traps and guns. Sprinkling the

trees with blood is said to be effectual, as is the above-mentioned use of tarred paper. Laths bound on with annealed wire are also used.

Water should not stand upon the surface; open ditches to let off such accumulations.

Old Orchards are better pruned in winter than to be neglected altogether. Old and decaying limbs are to be cut out altogether, as well as those that crowd one another. Others are to be headed back to get a new growth. Where large cuts are made they should be covered with melted grafting wax.

Cuts, for root-grafting this winter, or stock-grafting in the spring, may be cut wherever the wood is not frozen. Label carefully after tying in convenient bundles. Sawdust is the best material for packing. Where there are but few they will keep well in a close tin box, or tight glass jar, with no packing, if kept in a cellar or other cool place.

Manure may be applied to the orchard. Good rich compost is the best. Long or littersy manure should never be put near small trees, to harbor mice.

Fruit.—Watch that in the fruit room or cellar, and as its period of ripening approaches, bring it into a warm room to finish the process. Send off fruit to market before softening begins.

Root-grafting may occupy the time when out-door work cannot be done. It is best to work at but one variety at a time, to avoid mixing.

What to Plant may well be considered in time. Get all possible neighborhood experience. During the winter, especially at the West, there will be numerous pomological meetings; attend these, if possible, hear discussions, see fruits, and talk with fruit growers. Read works on pomology, and be able to make an intelligent selection of fruits for spring planting, for home use, or for marketing.

Labels.—A good stock of these should be made during the winter months,—some notched to receive a wire by which to fasten them to trees, and others pointed at one end to enter the earth. Have one side, at least, smooth. Fine will last one season in the ground; if desired for a longer time, use cedar. Smear the place to be written on with white lead paint or linseed oil, and write with a soft pencil.

Fruit Garden.

The care of trees in the fruit garden is the same as mentioned for young trees in the orchard.

Bush and Pyramid Trees must not be allowed to become injured by accumulations of snow.

Protection is to be given to all plants requiring it. Raspberries of the tender sorts are to be covered with earth, as are grape vines where protection is needed. Cover the earth around strawberry plants, but do not cover the plants themselves too heavily. Straw, bog-hay, or corn-stalks are used for this purpose, and when it can be obtained, "Pine straw," or fallen pine leaves, answers.

Grape Vines.—Finish up the pruning in mild weather. Save such wood as is needed for propagation. See last month's notes on pruning.

Kitchen Garden.

Crops that have been harvested should be looked after and made secure, and roots, celery, etc., in pits and trenches have a covering proportioned to the severity of the weather.

Parsnips, Horseradish, and Salsify.—A good portion of the crop of these is usually left in the ground, to be dug in early spring or during mild spells in the winter. By covering the beds with litter the freezing up may be postponed, and the season of digging prolonged.

Spinach, Kale, Leeks, and other crops left in the ground in Northern localities need a covering of straw, leaves, or some other similar matter.

Cabbages.—Cover the inserted heads with earth, if not already done. The earth should be about six inches deep over the heads, and the edges pointed and smoothed with a spade so as to shed rain.

Cold Frames must not on mild days be allowed to become hot frames. There will be but few days on which the plants will not need air, and many on which the sash may be kept off until night.

Tools.—Many conveniences of the garden may be made during the winter. Arrange for a tool-house in some convenient place, if there is not one already.

Manure is the gardener's main care in winter. Every town and village allows valuable fertilizers to go to waste, as does almost every farm. Have an eye to the various factories, breweries, and the like, in the neighborhood, and see what their waste products are. It often happens that good fertilizers may be had for the expense of carting.

Seeds.—If any are not put away, thrash or rub out, label, and put in a safe place. Overhaul old stock, and keep none, the vitality or identity of which is doubtful. Those who purchase largely should be prepared to order early, as some kinds, seedsman inform us, are likely to be very scarce.

Flower Garden and Lawn.

There is usually more or less clearing up to be done of the remains of those vines and herbaceous plants which, after a long struggle, have at last yielded to heavy frosts. Take timely care of

Trellises, and all supports of a movable character. They should be put under cover, and permanent ones repaired and painted, if they require it.

Bulb Beds, whether new or old, if not already covered, should be protected by coarse manure.

Protection, with a covering of earth, will enable many half-hardy Roses, Wistarias, etc., to winter safely much further north than they would if left exposed upon the trellises.

Herbaceous Perennials, such as Peonies, Phloxes, Dicentras, and the like, come out all the better in spring for a forkful of manure as a winter blanket.

Half-hardy Shrubs, deciduous as well as evergreen, do much better with some cedar boughs tied or stuck around them, than in the old way of bundling them in straw, and with less trouble.

Snow will often break down or bend out of shape evergreens and dense masses of shrubbery. Shake out the snow before it becomes icy.

Rustic Work affords pleasant occupation for the winter. Seats for the garden should be solid and substantial. Vases and baskets ought to display taste without being painfully elaborate in design.

Cold Frames, in which Roses, Verbenas, and other half-hardy plants are stored for the winter, will need careful management. These plants will endure a low temperature, and even a slight freezing, provided they are perfectly dormant. Endeavor to preserve an uniformly low temperature, by airing by day and covering at night.

Chrysanthemums that have been potted for house-blooming should be cut back when they have passed out of flower, and the pots stored in a cellar or shed, if it is desirable to preserve the roots for spring propagation. They are easily multiplied.

Green and Hot-Houses.

Heat, air, water, and insects, are the principal things to be managed in this department.

Heat must of course be governed by the nature of the plants. Amateurs are apt to keep the house too warm, especially at night. There should be about 15° difference between the day and night temperature, the change being gradual.

Air is to be given whenever the outside temperature will allow the ventilators to be opened.

Water.—The frequency with which this will be required will depend upon the temperature. Where the house is large enough to warrant it, a force pump and hose will save much labor in watering.

Insects.—Tobacco smoke is the main reliance to kill the green fly, and the red spider has a horror of showering. The thumb and finger will do much.

Bulbs in pots should be brought from their cool quarters, a few at a time, for a succession.

Sods.—The basis of good potting soil is well-decomposed sods. These may be collected now in a mild spell, and stacked up, laying the grass sides together, to decay. This is a stock of which one can hardly have too much, and the heap of it should be increased at every favorable opportunity.

AMERICAN AGRICULTURIST.

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The above, if unerplained, would appear a little startling, in a journal that constantly exposes the frauds of "Gift Enterprises," but this is a genuine affair, meaning just what is announced, as explained below. Please examine it carefully.

Our circulation is so large, and the cost of providing an office, editors, engravers, printers, stereotypers, and of collecting information, etc., etc., is divided among so many, that we can furnish a paper unequaled for size, beauty, and real value, at a very low price. Then, the great circulation makes our advertising pages so valuable that we have a large surplus to give in good premiums to those who aid in keeping up and increasing the number of subscribers from year to year. There are tens of thousands of people who gladly subscribe for a journal of this kind, when saved the trouble of annually writing and remitting money for it, by some one who acts as "agent."

We therefore wish, in some way, to remunerate one or more persons at *every post-office* for collecting and forwarding the names and money of old subscribers and enlisting new ones. To save immense correspondence, and obviate inquiry about the responsibility of local agents, we simply offer definite premiums, open to all alike, so that everybody desiring to do so can gather a list of names where he or she is acquainted, and thus secure the premiums. By large cash purchases, at wholesale prices or less, and

by special advertising arrangements, we are able to select first-class articles, such as are everywhere wanted, and offer far *larger* remuneration than we could possibly pay in cash, while the premiums are equal to cash. Many persons canvass as a business, receive and sell the premiums at the regular price, and thus obtain much higher wages or salary than they could obtain in any other way. Some persons (including several ladies) have thus realized \$200 to \$800 each, during the past three months! There is abundant room for many thousands of others to engage in the same business, though our general aim is to enlist one to five residents near each post-office, who will work from year to year, and receive some premium article each year that may be a useful keepsake. So much for the general aim and results of our premium scheme.

Now about the heading of this article: There are over 30,000 post-offices within the bounds of our circulation in the United States and Territories, the Dominion, etc., having around them an average of about 200 families each, some much more, and others much less than this. At many of these offices we have two, three, four, and five premium clubs, numbering from a dozen to five hundred in a club, and averaging about thirty. From our premium books we estimate that one premium club of a dozen or more could easily be gathered at every one of the 30,000 post-offices. There is that number of families or persons who would be benefited by the paper far beyond its cost, and who would take it if properly presented by a home canvasser. Judging from what has been done in many places, which are fair examples of all others, there can be two premium clubs, at one-sixth of these offices; at another sixth, three clubs; at another sixth, four clubs; and at another sixth, five such clubs, leaving 10,000 to have only one club each. This gives a total of 80,000 premium lists to be easily gathered, if enterprising persons simply take the work in hand. (This, at an

average of thirty to a club, would supply less than one family in six with the paper.) Now we offer one of our premiums for every club that shall be forwarded, even up to 80,000! Our premiums are standard articles, of which any required supply can be furnished (excepting only the animals), and we have the facilities for giving 80, or 80,000 premiums, or more!

Well, friends, the object of the above is to show that there is an almost unlimited field for us and for *you*. One-half of all our present subscribers, on an average, may *each* get a premium. We are ready to do our part *well* and promptly. It gives us great pleasure to send off load after load of these fine premium articles, and, as we know by thousands of letters from those who have had them, they give great satisfaction and pleasure on their arrival. We have been sending them off daily for nearly three months past, in return for subscribers sent in for next year. This month of

DECEMBER

is a Harvest Month—the best of the year for raising large as well as small premium lists *rapidly*. The Editors are hard at work getting up a valuable and beautiful number for January 1st, and those whose names come in soon will have it in hand before New Year's Day. Send names in as fast as secured, so that the paper may be promptly received by each, and *at any time* within six months, (when the list ~~is~~ as large as you can make it), choose the premium and it will be promptly sent. The Table of Premiums and notes accompanying, give all needed particulars. For full description of each Premium, see October number, with additions in November; or send for an extra copy of the Descriptive List, which is furnished free to any one desiring it.

Now, Friends, one and all, we respectfully solicit your earnest and immediate co-operation in swelling our roll of readers, far beyond all former years, not only for the good the paper will do those who receive and read it, but for the pleasure

it will give us to send and *you* to receive

One of the very valuable **Breeding Animals**;
Or a pair of the very beautiful **Poultry**;
Or a choice Parcel of excellent **Seeds**;
Or \$20 worth of reliable **Nursery Stock**;
Or a choice from the best **Sewing Machines**;
Or the best Clothes **Washer or Wringer**;
Or Some of Hart's **Extra Plated Ware**;
Or Patterson's unsurpassed **Cutlery**;
Or one of Prince's melodious **Melodeons**;
Or Steinway's **Superb Piano**; or a **Colibri**;
Or a genuine **American Watch**;
Or one of those excellent **Guns**, (two kinds);
Or a valuable Chest of **A No. 1 Tools**;
Or a good **Gold Pen**, "mightier than a sword,"
Or a Woodruff's most valuable **Barometer**;
Or a **Mowing Machine** (as it is a Mower);
Or a **Valuable Plow** (two kinds offered);
Or a **Hand Engine** of great convenience;
Or a "Just Weight and Balance," (**Fairbanks**).
Or a Box of Crandall's **Blocks** for Little Folks;
Or an "Open and Shut" **Pocket Lantern**;
Or a Magnificent Library (in the **Cyclopedia**);
Or a Great and valuable **Dictionary**;
Or a Set of our fine **Back Volumes**;
Or your choice of the best **BOOKS**.

Choose one or more things, and get them *this* year, and then others next year, and so on. A **Premium Club** now will open the way for a *larger* one next year. **Determination and perseverance will secure it.** What thousands of them have done successfully, you can do. And it may as well be done now, as next week. "Push things," and you will have the Premiums secured in "Double Quick time." Let us have the first instalment of names on your Premium List, the first week in December.

Read and carefully note the following: (a) Get subscribers anywhere; all sent by one person count together, though from one or a dozen different Post-Offices. But... (b) Say with each name or list of names sent, that it is for a premium list, and we will so record it. (c) Send the names as fast as obtained, that the subscribers may begin to receive the paper at once. Any time, from one to six months, will be allowed, to fill up your list as large as you may desire. The premium will be paid *whenever* you call for it.... (d) Send the exact money with each list of names, so that there may be no confusion of money accounts.... (e) Old and new subscribers all count in premium clubs, but a portion, at least, should be new names; it is partly to get these that we offer the premiums.... (f) Specimen Numbers, Cards, and Show-bills, will be supplied free as needed by canvassers, but they should be used carefully and economically, for every extra copy of the paper costs, with the 3c. prepaid postage, about 12 cents.... (g) Remit money in Checks on New York Banks or Bankers payable to order of Orange Judd & Co., or send Post-Office Money Orders. If neither of these is obtainable, Register Money Letters, affixing stamps both for the postage and registry; put in the money and seal the letter in the presence of the Postmaster, and take his receipt for it. Money sent in any of the above ways is at our risk.

[In this table are given the regular cash prices of each article, and the number of subscribers required at \$1.50 a year, to get it free, also at the lowest club rate of \$1 a year. For full descriptions of the articles see extra sheets sent free.]

Table of Premiums and Terms, For Volume 28—(1869).

Open to all—No Competition.

No.	Names of Premium Articles.	Price of Premiums.	Number of Subscribers required at \$1.50 \$1.
1	Short-horn Bull, "Champion,"	\$200 00	423 12397
2	Short-horn Bull, "Madison,"	\$200 00	423 12397
3	Applshire Bull, "Werner,"	\$200 00	250 750
4	Applshire Bull, "Duke of Devon,"	\$200 00	250 750
5	Applshire Bull, "McKean,"	\$200 00	250 750
6	Applshire Bull, "Matamor,"	\$200 00	250 750
7	Applshire Bull, "Duke of Devon,"	\$200 00	250 750
8	Applshire Bull, "Johnny Groat,"	\$200 00	180 525
9	Applshire Bull, "John Brown,"	\$200 00	180 525
10	Applshire Bull Calf,	\$80 00	96 325
11	Applshire Bull Calf,	\$80 00	96 325
12	Applshire Bull, "Wachusett,"	\$200 00	250 750
13	Applshire Bull, "Acushnet,"	\$200 00	250 750
14	Applshire Bull, "Ossipee,"	\$200 00	250 750
15	Applshire Bull, "Albion,"	\$200 00	250 750
16	Catshead Barn,	\$200 00	250 750
17	Catshead Barn,	\$200 00	250 750
18	Catshead Barn,	\$200 00	250 750
19	Catshead Barn,	\$200 00	250 750
20	Catshead Barn,	\$200 00	250 750
21	La Roche Pairs, one Pair,	\$200 00	250 750
22	Houtan Pairs, one Pair,	\$200 00	250 750
23	Black Spanish Pairs, one Pair,	\$200 00	250 750
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98	Black Spanish Pairs, one Pair,	\$200 00	250 750
99	Black Spanish Pairs, one Pair,	\$200 00	250 750
100	Black Spanish Pairs, one Pair,	\$200 00	250 750

Every Premium article is new and of the very best manufacture. No charge is made for packing or boxing any article in our Premium List. The thirty-two Premiums, Nos. 29, 30, 31, 61, 62, 63, 64, and 76 to 100 inclusive, will each be delivered FREE of all charges, by mail or express, (at the Post-Office or express office nearest recipient), to any place in the United States or Territories. —The other articles cost the recipient only the freight after leaving the manufactory of each, by any conveyance specified.

Description of the Premiums.

A FULL DESCRIPTION of all the premiums is given on an extra sheet, a copy of which will be sent free to every one desiring it. We have only room here for the following:

Nos. 76 to 81—Volumes of the American Agriculturist (Unbound).—These amount to a large and valuable Library on all matters pertaining to the Farm, Garden, and Household, and contain more varied information than these subjects than can be obtained in books costing three times as much. We have stereotype plates from the Sixteenth to the Twenty-seventh Volume complete, from which we print numbers as needed. The price of the volumes is \$1.50 each, at the Office, or \$1.75 if sent by mail, as they must be post-paid. They are put up in album numbers, with full index to each volume. They are profusely illustrated. The Engravings used in them having alone cost about \$30,000. Those obtaining premiums for less than twelve volumes can select any volumes desired, from 16 to 27.

Nos. 82 to 87—Bound Volumes of Agriculturist.—These are the same as Nos. 76 to 81 above, but are nearly bound in uniform style, and cost us more for the binding and postage. Sent post-paid.

Nos. 88 to 99—GOOD LIBRARIES.

In these premiums, we offer a choice of Books for the Farm, Garden, and Household. The person entitled to any one of the premiums 88 to 99 may select any books desired from the list below, to the amount of the premiums, and the books will be forwarded, *paid through*, to the nearest Post-Office, or Express office, as we may find it most convenient to send them.

No. 100—General Book Premium.

Any one not desiring the specific Book premiums, 88 to 99, may select Books from the list below, to the amount of 10 cents worth for each subscriber sent at \$1; or 30 cents for each name sent at the (ten) club price of \$1.20 each; or 60 cents worth for each name at \$1.50. This offer is only for clubs of 25 or more. The books will be sent by mail or express, prepaid through by us.

BOOKS FOR FARMERS AND OTHERS.

[For sale at the Office of the Agriculturist, or they will be forwarded by mail, post-paid, on receipt of price. All these are included in our Premiums, Nos. 88 to 100, above.]

Allen's (L. F.) Rural Architecture	\$1 50
Allen's (L. F.) American Farm and Garden	1 50
Allen's Diseases of Domestic Animals	1 00
Am. Agricultural Annual, 1866 & 1867 each, pa. 50c.	1 00
Am. Horticultural Annual, 1867 & 1868 each, pa. 50c.	1 00
American Bird Fancier	30
American Pomology, Apple—By Dr. John A. Warder	3 00
American Rose Culturist	30
American Weeds and Useful Plants	1 75
Architecture, by Cummings & Miller	10 00
Architecture, Modern Am., by Cummings & Miller	10 00
Bement's Rabbit Fancier	30
Bement's Method of Making Cheese	30
Book of Evergreens (J. Hoopes)	4 00
Bonington's Rural Economy	1 50
Book of New Books for Farmers	1 50
Buist's Flower Garden Directory	1 50
Buist's Family Kitchen Gardener	1 00
Buist's Grape Grapes and Grapes	1 00
Cobbett's American Gardener	25
Cole's (S. W.) American Fruit Book	25
Cobbett's Veterinary	25
Copeland's Country Life	50c. cloth.
Cotton Culture, (Lynn)	50
Cotton Planter's Manual	50
Dadd's (Geo. H.) Modern Horse Doctor	1 50
Dadd's American Cattle Doctor	1 50
Darwin's Duck Manual	25
Darwin's Animals & Plants under Domestication, 2 vols.	60
Doan and Gun (Hoopes) on the Culture of	25
Downing's Landscape Gardening (new Edition)	6 50
Draining for Profit and Health, by G. E. Walling, Jr.	1 50
Eastwood on Cranberry	25
Elliot's Western Fruit Grower's Guide	1 50
Flax Culture	25
Fiddle (Thomas W.) Pot Culture	25
French's Farm Drainage	1 50
Fuller's Grape Culture, 2d Edition	30
Fuller's Strawberry Culturist	30
Fuller's Small Fruit Culturist	30
Gardening for Profit and Pleasure	1 50
Gardening for the South, by the late Wm. N. Whitte	2 00
Gregory on Squashes	paper.
Hammond on Melon Culture	25
Harris Insects Injurious to Vegetation, clo. \$1. cl'd 15c.	6 00
Harris Rural Animal, Bond, 8 Nos. in 2 Vols. Each	1 50
Harris's Hints to Horsekeepers	25
Hot Culture	25
How Crops Grow, by Prof. S. W. Johnson	50
Hunter and Trapper	50
Johnson's Agricultural Chemistry	1 75
Johnson's Elements of Agricultural Chemistry	1 50
Leach's How to Build Hot-Houses	1 50
Miles on the Horse's Foot	30
Miles on the Grape	30
My Vineyard at Lakeview	1 25
Norton's Scientific Agriculture	25
Onion Culture	25
Our Farm of Four Acres (bond) 60c	paper.
Pardee on Strawberry Culture	30
Pest and Its Cure, by Prof. S. W. Johnson	25
Pedder's Land Measurer	25
Percheron Horse	60
Quintessence of Mysteries in Bee Keeping (S.W.)	1 25
Randall's Sheep Husbandry	1 50
Randall's Fine Wool Sheep Husbandry	1 50
Randall's Miniature Fruit Garden	1 50
Richardson on the Dog, paper 25c.	cloth.
Rich's Domestic Poultry, 2 vols.	1 50
Schenck's Gardener's Text Book	1 25
Skiff's Household	1 50
Smith's (John) Poultry	1 50
Thompson's Food of Animals	1 50
The Hunker Papers	1 50
Success Culture	25
Ward's Hedges and Evergreens	1 50
Yonatt and Spooner on the Hog	1 50
Yonatt and Spooner on the Cow	1 50
Yonatt on the Hog	1 00
Yonatt on Sheep	1 00

and practice, if they choose, the very processes which he finds most profitable. With this view he has written *Practical Floriculture*, in which he tells all the "secrets" of the trade in vigorous Hendersonian style, and he gives full instructions in his way of doing things. Not only is the whole "art and mystery" of propagation explained, but the reader is taught how to plant and grow the plants after they have been propagated. The work is not one for florists and gardeners only, but the amateur's wants are constantly kept in mind, and we have a very complete treatise on the cultivation of flowers under glass, or in the open air, suited to those who grow flowers for pleasure, as well as those who make them a matter of trade. The work is characterized by the same radical common sense that marked his "Gardening for Profit," and we predict for it a similar popularity. Special contributions have been furnished by Messrs. E. A. Bunnann, Jas. Fleming, and others. Beautifully illustrated; ready in January.

Send as a Holiday Present, to a country or other friend, a year's subscription to the *Agriculturist*. It will be useful, and will remind the recipient of the giver, every time it comes to hand. When desired, in such cases, the Publishers enclose in the first number an office receipt, marking on it the name of the donor.

Cattle Diseases.—A new work by Prof. John Gamgee on Cattle Diseases, adapted to the needs of American farmers and breeders, is in the course of preparation and soon to be issued by Orange Judd & Co. Prof. G. has been for nearly a year past, and is now, studying the diseases of American neat cattle and will be greatly obliged for any information which will add to the accuracy of his knowledge on this subject. Address, care of the Publishers of the *American Agriculturist*.

Seeds.—Please understand that we send out no seeds to subscribers, except in collections, as stated in our premium lists. We have no seeds whatever for sale; those wishing to purchase should apply to dealers, the names of several of whom are to be found in our advertising columns, and who will fill orders by mail, with care.

Sundry Humbugs.—If any one supposes because we have routed and defeated the "Gift Enterprise" we have done with humbugs, he makes a great mistake. These were only the night artillery of the grand army; being able to move rapidly and change front often, we were obliged to follow them up to the neglect sometimes of other divisions of the enemy. Having driven back this battery, and Congress having spiked their guns, we can attend to some of the entrenched forces.

Mutual Benefit Associations. Be cautious here! Some of these are doubtless started in good faith, while others are pure frauds, as no such "companies" are to be found at the places advertised. We have called at the offices of several of these associations, as designated by their circulars, etc. At some we found a regular office with the usual outfit of desks, clerks, books, etc., such as pertain to an ordinary Life Insurance Co., while in other cases we found ourselves confronted by the "shirts" of some old offender in the quick doctor line. These old chaps avail themselves of every device to bring fish into their nets, and "agents" for a Mutual Benefit Association is one of them. Assuming that an association of the kind is managed by honest hands, of what "benefit" is it? We have looked into the plans, and as they have been presented we fail to see any inducement for anybody to invest. An association of this kind is not a Life Insurance Co., but a "Mutual Association" for the benefit of deceased members. Let us look a little closely at the plan. One of these associations proposes to classify members by their ages. For instance, persons between the ages of 20 and 25 years make one class, those from 25 to 30 another, and so on. We are told that each class, when complete, will have 5000 members. The "Mutual Benefit" consists in this,—when one member dies in any class, each of the survivors is to pay a dollar for the support of his family. Suppose you join a class at 20 years of age and live until you are 60 years old. What have you to pay out as a tax for deaths in your class for forty years? Taking their estimate, that thirty members will die in each class every year, you are taxed \$1 for each death, (it is generally a few cents more, to defray postage, etc.), which would amount in forty years to \$1,200. But at this death rate it would take over 160 years for any one class to die off which is over three times longer than the average duration of human life. So that, in reality, if you pay \$1 for each member who dies, you will in forty years have paid say three times \$1,200, or \$3,600. Suppose at the end of that time you die, what will your family get from the association? The \$3,600 represent 3,600 deaths out of 5,000 members; so that your family get for your outlay of \$3,600 just \$1,400, at the time of your death. Of course the association claims that the class is kept up to the full number by addition of new members, but this is not practi-

cable. We are well assured that an old organization of this sort of several years' standing has only a few hundred members including all ages, and that for a year or more the admission of new members has not more than equalled the death rate. From all we can learn, then, we feel assured that these "Benefit Associations" are ill advised, impracticable, and unsafe. We would suggest to persons visiting New York to avoid the various cheap jewelry and plated ware vendors in basement stores and on streets leading from the Railroad Stations and Steamboat Landings. Every few days we hear complaints of swindling at these places, principally of strangers who are spending a few days in the city. It is a safe rule never to buy a thing you do not want, no matter how cheap it may be. This holds doubly true with jewelry, plated ware, and the like. If one wishes to purchase articles of this kind, let him go to a regular dealer, and if he is a stranger in New York, let him step into our office and we will tell him where to find one; but let him keep out of all un-dogmated places of this kind. "One Dollar" shops are multiplying; it is the old "anything on this board for a shilling" expanded to a dollar. These shops differ in extent and style, but take them as a class, there is no advantage in them, but the contrary. Persons may rest assured that merchants do not sell things for less than their value. And we have yet to see the article worth more than \$1.00 to be had at these places. Their main stock in trade is "Fine Gift Jewelry" and galvanized trumpery called "plated ware." We deprecate most earnestly the taste that seeks after and uses such stuff.

The Fair of the St. Louis Agricultural and Mechanical Association was a grand exhibition, and we regret to be obliged to use the name of St. Louis or of Missouri in an article on Humbugs; but the truth obliges us to protest—and all right thinking people in Missouri will sustain us in it—against complicity so noble a fair with a base swindle. Every lottery, every drawing, every game of chance of every kind, we hold to be a crime and a fraud against the public, and we cannot except the "Grand Drawing of the Paschal House Association." Even if this drawing was held on the fair grounds, and even if the Mayor of St. Louis did so far forget his office as to preside at the drawing, we can not, the less denounce it. Many bought tickets, and but few drew prizes. Many fools lost their money, and a few sharpened blades. "No!" Notwithstanding the drawing was held on a place dedicated to better things, and the presence of the Mayor of St. Louis gave promise that "everything was serene," somehow nobody can tell how, and wouldn't if he could—the chief prizes happened to go to the members of the association aforesaid. Didn't the St. Louis people ever hear of the great "Crosby Opera House Lottery"? We will give the Mayor credit for being ashamed of his share in the swindle, as he has published an article stating that the whole thing was unlawful and wrong, and "warns all persons from entering into any similar enterprise whatever." That warning is very good of the Mayor, and if, as Sambo said it had come "just previously before" instead of "just previously after" the "drawing," it might have had some effect. . . . What that produces 300 bushels to the acre! Let every body send at once to the "Southern Experimental Company," and get—beautifully sold. Mr. S. E. Company—whoever you may be—your are very green. If you had put it at 50 or even 100 bushels, the thing might have caught a few, but you have spoilt the whole with your 300 bushels. "It outwits all acclimated novelties"—we should say so. It is "Rocky Mountain Mammoth Wheat," of course it is, and wasn't the Pacific Railroad built by the S. E. Company, all on purpose to bring in this Mammoth thing? "It is unlike wheat in every respect, except it makes a very good flour." Why call it wheat at all? Why not say what the thing is? "Entirely new kind of Grain"—confounded it is—kely story. "How to save money" is a very necessary direction. Few will be fools enough to heed it. "Southern Experimental Company," try again. Farmers are liable to be swindled at their own doors. One of the latest dodges is for a couple of chaps with surveyors' instruments to come along, pretending that they are surveying for a railroad the line of which will run directly through your farm. For a consideration of \$50 or so, they can be induced to go a little to one side. If any such fellows come along, ask to see their authority. If they can't show any, then show yours, and order them off of the premises.

Aquarium.—"Effie."—You will find a note on feeding gold-fish on page 418, last month. Any plants that grow in our ponds and deep streams, nearly or quite submerged, will do in an aquarium. The Water-Banunculus, Water-Milfoil, and Honey-swort are among those most used. These are now probably in their winter state, and must be sought for at the bottom.

The Concord Grape in Missouri.—A. A. Blumer, Pike Co., Mo., writes that, in 1866, he planted 1500 vines of Concord, which fruited this year,

and proved a failure. Mr. D. says that, "apparently, the Concord does not improve here in Pike Co., but proves as bad in the West as in the East, any assertions to the contrary notwithstanding." The Iowa and Delaware do well in his neighborhood. On the other hand, the Mississippi Valley Grape Growers' Association have recently decided by a vote, which we think was unanimous, that the Concord is the best grape for Missouri. All this goes to show that the question of varieties is a local one. No one variety of fruit can be the best for every part of any State, especially for one so large as Missouri.

Clinton Grape Blighting.—J. Wells has a row of Clintons on each side of a garden walk; a drain from the cellar runs close by the roots of one row. The same grape in other parts of the garden does well. The trouble probably is the drain from the cellar, which keeps the soil around the roots unduly moist.

Salsify and Parsnips.—"J. W." Warren, Ill. These are left in the ground mainly as a matter of convenience, as it saves trouble in storing, and some think that they are improved by the action of frost. In our notes for the month, we always advise lifting and storing a sufficient quantity to last during the time the ground remains frozen. There is no necessity for leaving them until spring. Either parsnips or salsify may be eaten, when large enough, in summer or fall.

Twelve Thousand Dollars' Worth of Engravings, at least, will be given in the *Agriculturist* during 1869. To obtain neatly printed copies of all these, will cost only \$1.50, or less to clubs, with all the reading matter thrown in.

A Book to Make a Good Farmer.—"Juvenile," Athens, Tenn. A young man desirous of being a good farmer wishes to buy "the best book for beginners." The young man wants a practical book. He had better let theory alone until he has a good foundation of agricultural practice and experience to guide him. This he will get ten times as fast in the garden as in the field, and so we think the very best book we can put into his hands is Peter Henderson's "Gardening for Profit." In this he will learn, 1st, the value of clean, deep, thorough tillage; 2d, the importance of manure; 3d, that well-directed labor pays; 4th, the importance of good seed; 5th, the necessity of raising such crops as one has a quick market for. These lessons from the garden are the most important ones that a young farmer can learn and practice, and are just as applicable on a 1000-acre farm in Illinois or Tennessee as in a Jersey market garden. See book list. *Gardening for Profit* is \$1.50 by mail.

The American Horticultural Annual will be ready at the beginning of the year. It will contain valuable communications and reports by many of the eminent horticulturists of the country, and in intrinsic value and beauty of illustration will, to say the least, be equal to the volumes which have preceded it. Price, by mail, 50 cents, paper; 75 cents, cloth.

How to Plant Hickory Nuts.—"T. J." We have not had much experience, but found last year that Hickory nuts sprouted well-laid in sand under a flat stone, where they remained moist all winter. This year we are planting some upon a mass of forest leaves in a furrow, covering with leaves and soil 3 inches deep.

Steaming Food for Cattle, etc.—Herbert Mead, of Cross River, wishes information which we can hardly give without gratuitously advertising Mr. Prindle's apparatus, which it is not our business to do. So far as we know, the steaming is not done under pressure, and the effects of steam upon fodder at high pressures has never, to our knowledge, been the subject of experiment, and is an important subject for investigation.

A Christmas Show of Poultry.—We publish an advertisement of a National Show of Poultry to take place Christmas week in Philadelphia, under the auspices of the Philadelphia Poultry Club, which is composed of men whose names give a character to the undertaking, and place it above suspicion.

The Potomac Fruit Growers' Association of Alexandria and Fairfax counties, Va., was organized on the 11th of September by the election of Hon. Charles H. Brannah, of Fairfax Co., as President, with Mr. Robert A. Phillips, of Alexandria Co., as first Vice-President. This is the first association of the kind yet formed in that section of the country, which has great capabilities for fruit raising, and we trust that similar societies will be formed in all parts of the country.

IT WILL PAY.—Half a dozen intelligent and thoroughly practical men are constantly engaged in hunting up information, examining and sifting all they can hear, read, and see, and the results of their labors are condensed into these pages in as readable form as possible. The paper is as valuable for what it leaves out—as useless, or worthless, or worse—as for what it prints. Can any one go through *eight hundred columns* of such matter, given in this journal each year, without getting some hint, or some train of thought that will, in the end, result in a profit far more than the dollar, or dollar-and-a-half, it costs? The four hundred engravings will alone give much more pleasure and profit than the money would bring in any other way.

Ten Million Dollars Saved!—Anybody who will examine the tens of thousands of letters, circulars, etc., which we have received concerning the operations of the humbug fraternity, will very readily endorse the estimate recently made that this journal alone has saved to the people of the country at least ten million dollars that would have gone into the pockets of swindlers, but for the exposures and cautions given in these pages. The truth is more than half of the people of the entire country have been cheated by the swindling operators of one kind and another, though few people are willing to let it be known that they have been in the trap. But since this journal has obtained an almost universal circulation, the swindlers have found their occupation gone, or nearly so. One of the leading operators recently remarked, that "they ought to have raised money enough to have bought out the *Agriculturist*, type and all, and shut it up."—*Mem.* It is not for sale, and will not be until the Humbugs are made too poor to buy it.

Save the Index Sheet, which is put loosely in this number, so that it can be bound or stitched at the beginning of the volume without cutting the thread.

Bound Copies of this Volume will soon be ready. Price, \$2, at our office, or \$2.50 each, if sent by mail. Any of the previous eleven volumes (15 to 26) will be forwarded at the same price. Sets of numbers sent to our office will be neatly bound in our regular style for 75 cents per volume, 60 cents extra, if returned by mail. Missing numbers supplied at 12 cents each.

Clubs can at any time be increased, by remitting for each addition the price paid by the original members, if the subscriptions all date at the same starting point. The back numbers will, of course, be sent to added names.

"Death on Humbugs."—The other day we received a club of subscribers from a mountainous coal region in Pennsylvania, sent by a miner who remarked that: "We have not a foot of land to cultivate, and no time above ground to work any, but we take your paper because it is death on humbugs. One of our miners had the paper sent him by an Eastern relative last year, and a single item in it stopped the forwarding of \$400 made up in our mine to send to a plausible gift enterprise. This is only one case. A lot of us estimated last week that the single copy of the *American Agriculturist* taken here has saved in one Mine several thousands of dollars. The paper has been loaned and read until each copy has been worn out, or soiled too much to be longer read. Our wives and children are eager after it, and the pictures are greatly interesting, even to us begrimed miners."—We give this as a specimen of a multitude of other similar testimonials. The work pays in the satisfaction it gives, notwithstanding the labor it makes.—Thanks to the aid our exposures have drawn from Congress, the mails are measurably closed against a considerable class. But, like diving ducks, they will bob up somewhere—they are too lazy or naturally too dishonest to work for a living—and we shall keep our trusty gun well loaded, cocked, and aimed, ready to pick off every broad bill that comes to the surface.


"The Hunter and Trapper."—In this little work, just published by Orange Judd & Co., and advertised on another page, Mr. Halsey Thrasher, an old hunter and trapper, relates his experience. When a boy, like many others, he became fond of a gun and trap, and his first success, as he tells us, was in making a steel trap in the blacksmith's shop where he had been placed to learn a trade. From his first exploits, of catching foxes, to the time when he became an expert trapper of the bear and hunter of the deer, very much, of course, was learned, and in his book this is all told in a manner that cannot fail to interest all who would care to hear an old hunter's story. The best modes of hunting and trapping are given, with hints about guns, rifles, and traps, and directions for tanning skins, etc. The work is illustrated. It is neatly bound in flexible covers, and will be sent by mail, post-paid, for \$1.




SPECIAL REQUEST


TO MORE THAN

100,000 of our Readers.

Though many subscriptions originally extended beyond this year, and large numbers have already renewed for next year, in Premium Clubs and otherwise, there still remain more than 100,000 names to be renewed on our books before the wrapper writers can prepare for mailing them the next number. It would save us a *Thousand dollars* at least, if we could have these renewals come right in at the beginning of this month, so that the entries could all be made by experienced clerks, without the extra help and night work usually required the latter part of December.  Please oblige

us, friends, as soon as you read this item, by sitting right down, and sending in your renewal for 1869. All the letter needed is, a few simple words, giving your Post-office, County, State, and Name, and the amount enclosed, all plainly written. If three others join you, the four copies cost only \$5. If making up a larger Club, please let the names be forwarded for entry at once.  It will take no longer to attend to this about Dec. 1, than at a later date, while it will help our work greatly.

We take it for granted that every present subscriber will gladly continue reading this journal. The paper has kept right on improving, for many years past, and this rule will hold good hereafter. Each year's experience, and increasing mental and pecuniary resources, enable us to do better the next. Our success has been abundantly satisfactory, but we have higher aims, and we propose to ourselves to supply a greatly improved journal next year—one full of good things, of valuable practical information for all the people, and *beautifully illustrated* with the best things that first-class artists and engravers can bring forth. So we cordially invite all our large circle of readers to take a seat in the *Agriculturist* family for 1869, and bring along troops of new acquaintances for introduction.

 **Doors open anew for 1869 at precisely 7½ A.M., Tuesday, Dec. 1.—Admission Free, for the whole year, only \$1.50, and less to companies.**

Gardening for the South; or, How to Grow Vegetables and Fruits. By the late Wm. N. White, of Athens, Ga., assisted by J. Van Buren and Dr. James Camak. New York, Orange Judd & Co. Pp. 44. This work, which was long ago announced, is now ready. The death of Mr. White found a portion of the work in an incomplete state, but two of his horticultural friends, into whose hands he committed the task, kindly finished it, and it now appears to fill a long vacant place in our horticultural literature. It is the only work we have, written with special reference to the wants of the Southern States. Not only does the climate of these States require peculiar modes of culture, but it allows many things to be grown that cannot be raised at the North except under glass. It must not be supposed, however, that the work is solely for the benefit of Southern gardeners; the author has presented a treatise on gardening that will be found useful either North or South, and has discussed the operations of horticulture more extensively than is the custom with writers on gardening. The division devoted to fruits is mainly by Mr. J. Van Buren, a well-known pomologist of (Clarksville, Ga., and will be found to be not the least valuable portion of the work. The lists of varieties that upon trial have been found suited to the South, are of especial value to those who contemplate engaging in fruit culture in that section of the country. The work is abundantly illustrated and contains a portrait of the author.—Price by mail \$2.00.

Tomatoes in Michigan.—"C. W.," Market Gardener, Detroit, writes his experience with tomatoes, which we publish as an illustration of the fact that varieties will not be equally good in all parts of the country. He says: "This spring I purchased seeds of the Early Smooth Red, Early York, Early Cedar Hill, and Keyes' Prolific. This seed was all planted in hot-beds, March 12th, and the plants were transplanted into other hot-beds, April 21st, 6 inches apart each way. They all received the same care, and were planted in the open ground May 23d. The Smooth Red ripened first, the Keyes' one week behind, Cedar Hill and Early York two weeks later still. The Cedar Hill is one of the greatest humbugs ever sent out. How any man can recommend it to be an early and smooth variety, I cannot tell. It is the latest and worst tomato that can be planted by the market gardener, and the Early York is not much better."

Grape Testing at Hammondsport, N. Y.—In October last, a number of gentlemen were invited by the Pleasant Valley Wine Co. to serve as a committee to subject the leading varieties of native grapes to the test for sugar and acids. Those who grow grapes on the large scale understand what this means; to others we may briefly explain. The relative value of grapes for wine making—other things being equal—depends upon the amount of sugar contained in the juice or must. Regarding the juice as a mixture of sugar and water, the more sugar there is present, the denser the liquid will be, and the instrument used in the test, called a saccharometer (sugar-measurer), will sink more or less as the liquid contains less or more sugar. To develop the greatest amount of sugar by proper treatment of the vine and ripening of its fruit is the great point with the vineyardist, as in selling his crop its value depends upon the quality of the must. The amount of acid is of little importance in the better grapes, but is of consequence in those low in sugar. This is ascertained by observing how much solution of ammonia of a fixed strength is required to neutralize a measured amount of must. The committee was organized by the election of Hon. Marshall P. Wilder as Chairman, and the Hon. J. Stanton Gould as Secretary. The manipulation was skillfully performed by Mr. Wasson of the Company. A detailed account will be published, and we only present the results in brief, with the remark that some of the samples of grapes had been subjected to the deteriorating influence of a severe frost. Delaware, raised by E. H. Burgess, 89 degrees saccharometer, 84 thousandths acid; ditto, D. W. Burgess, 103 deg. sacch., 73.10ths acid; ditto, W. B. Barron, 92 deg. sacch., 94 acid; ditto, Pleasant Valley Wine Co., 99 deg. sacch., 101 acid; I-raella, D. S. Wagener, 84 deg. sacch., 54 acid; Iona, D. S. Wagener, 101 deg. sacch., 8.610ths acid; Catawba, A. Eggleston, 89½ deg. sacch., 124 acid; ditto, Urbana Wine Co., 86 deg. sacch., 13 acid; ditto, E. H. Burgess, 91 deg. sacch., 13.210ths acid; ditto, Pleasant Valley Wine Co., 91 deg. sacch., 13.310ths acid; Walcott, Ferris & Caywood, 99 deg. sacch., 9.310ths acid; Diana, P. V. Wine Co., 88 deg. sacch., 12.310ths acid; ditto, Urbana Wine Co., 90 deg. sacch., 11.110th acid; Crevelling, P. V. Wine Co., 78 deg. sacch., 10 acid; Alvey, P. V. Wine Co., 83 deg. sacch., 124 acid; Clinton, P. V. Wine Co., 53 deg. sacch.; Concord, P. V. Wine Co., 76 deg. sacch., 6 acid; Oporto, P. V. Wine Co., 78 deg. sacch., 12.510ths acid; Isabella, P. V. Wine Co., 76 deg. sacch., 124 acid; Scuppernon, from S. C. apparently not fully ripe, 60 deg. sacch., 9½ acid.

Sell an Acre of Land, if necessary, and stock your house with \$10 to \$50 worth of good books. You and your sons, if you have them, and your workmen, will read these; they will be kept out of mischief, and they will be led to think more, will be happier and more contented at work; and their minds will be disciplined to think more correctly. Such a collection of books will change the whole tone of the farm, and result in many profitable improvements.

The N. Y. (City) Farmers' Club.

Those who have thought us severe in our criticisms on this remarkable adjunct to the N. Y. Weekly Tribune are referred to the following extracts from the reports:

"James A. Whitney—Mr. Chairman: It is quite clear that this Club is a great power for good, when one of the members gives us a little of Moses, a little of Job, two Latin maxims, and some choice sprout-eggs in one sentence, etc." * * * "P. T. Quinn—Mr. Chairman: What would an English farmer think of us were he to step into this Club and find us gravely discussing the propriety of cutting food for animals, and Gamaliel and all the doctors of the law thundering their anathemas against hay-cutters? He would think that we had as yet the farmer's alphabet to learn.... Why, Mr. Chairman, must this Club be forever meddling with the first principles, and laboring to upset the axioms of our profession? We make ourselves a laughing-stock all over a great continent, by advancing theory in the face of old facts, solid facts, proven facts."—The report does not state that Mr. Q's conundrums were answered.

Tyrolese Larch.

"A. E. R., Fayette, Iowa. The Tyrolese is a variety of the common European Larch. It is claimed that it possesses greater vigor of growth and durability in its timber than the ordinary form. Of this we have no proof, and it is quite singular that the Tyrolese Larch, if it be so much superior, is not used in the great plantations of England. The European Larch, whether Tyrolese or other, is a most valuable timber tree—probably the most valuable that can be planted. As to shelter, it must be remembered that although the Larch belongs to the *Conifera* family, of which most of the members are evergreens, it is a deciduous tree, and, as a shelter in winter, being without leaves it would be greatly inferior to a true evergreen.

Portable Fences or Hurdles.

J. H. Haven, York Co., Pa., wishes to employ his leisure this winter in making portable fencing, so that he can do away with the interior fences on his farm and pasture it to better advantage. We have published several plans, one of which may be found in each of the following numbers of the *Agriculturist*,—February, 1866, June and August, 1867. Hurdles can seldom be made strong enough to be a good defense against breachy animals. For these there is nothing like a good chain fence made fast to the hind leg. If any of our readers have convenient forms of portable fence unimpaired by patents we would be glad to hear from them and publish some of the best.

\$25 or \$50 worth of books pertaining to the farm will give the boys new ideas, set them to thinking and observing, and thus enable them to make their heads help their hands. Any good book will, in the end, be of far more value to a youth than to have an extra acre of land, on coming to manhood. The thinking, reasoning, observing man, will certainly make more off from 49 acres, than he would off from 50 acres without the mental ability which reading will give him. Far better to sell the acre of land than do without the books. The Publishers' premium offers, on page 437, open a way to get books without expense. The farmers of every neighborhood ought to put their heads together and raise a club of subscribers, receive the books, and hold them for general use by all.

Labor Exchange.

—We have received the semi-annual report of the Castle Garden Labor Exchange for July, 1868. It is of interest, as it shows where the great mass of cheap labor, that comes to us from Europe, finds its market. The most thrifty part of these emigrants form their plans before they leave home, and press on to the great West, where friends have generally preceded them. Others come without any definite aim, except to benefit their temporal condition, with very little capital, and are compelled by their circumstances to accept the first opportunities for service that offer. To this class, which is much smaller than many suppose, the Labor Exchange is of incalculable benefit. It meets the poor emigrant on his landing with a ready market for the only commodity he has to sell. He is cheered and comforted at once with his brighter prospects in the new world. The statistics show 12,931 engagements in the six months; 15,316 applications for employment; and 15,700 orders for labor. The excess of these orders over engagements shows that there is little danger of too large

emigration to this country. More than five-sixths of these engagements are in the States of New York and New Jersey. For further particulars, address Castle Garden Labor Exchange, New York City.

Grinding Corn and Cobs.

"D. P. P., Williamsport, Pa. "Can you tell me if this practice, which prevailed in New England twenty or thirty years ago, is economical?"—The practice has been abandoned by wise farmers. In the cobs of sound, well-dried corn there is very little, if any, nutriment, certainly not enough to pay for grinding or cooking. In soft, half-ripened ears there is some nourishment, but they are not in condition for the mill. Then in grinding it was always noticeable, that the miller took his toll from that part of the heap where there was most corn and the least cob. Stock have the same kind of instinct as the miller, and it is best to gratify them. The bulk that is wanted in feeding cattle is better supplied with good hay.

Brewers' Grains—Value as Feed.

R. M. Barker asks: "Please tell if it is profitable to feed malt as we get it from the brewery, to horses, cattle, swine and poultry. Is it injurious? What is its real value per bushel when corn is \$1.50? How should it be fed out?"—Ans.—The article referred to is not malt, but properly called Brewers' Grains, and is the barley after the sprouts have been removed and the malt extracted. It is excellent feed, not injurious, unless absurdly misused. It contains, according to S. W. Johnson's *How Crops Grow*, on an average about 76 per cent of water as obtained from the brewery, nearly 5 per cent albuminous matter, which is the measure of its nutritious quality, and over 1½ per cent of oily matter, while sugar, starch, gum, melleage, etc., rich with the oil, all going to supply animal heat and fat, make up over 11 per cent. Compared with corn, which contains about 14 per cent of water only, it contains about half as much albuminous nutriment, one-fifth as much oil, and one-sixth as much starch, sugar, etc. It is generally worth as feed more than is asked for it.

Milk Experiments.

—Mr Frank J. Clarke, of Batte Co., instituted a course of experiments to guide him in managing his dairy. He is, we think, an accurate observer, and his results, which he sends us, tally very well with the views of those who have given the subject the most study. They are as follows: 1. The quality of the milk differs almost, if not quite, as much as the quantity given by different cows. 2. In buying get a sample of the cow's milk, if possible. 3. A cow gives richer milk when fat than when poor. 4. A cow gives poorer milk with the first calf than afterwards, other conditions being equal. 5. The older a cow is, the richer her milk until her constitution begins to fail. 6. The longer the period which has elapsed since calving, the richer the milk. 7. The richness of the milk varies with the quality of the feed. 8. The richness of cream varies—that from the richest milk making the most butter. 9. A cow should be in first-rate condition when she calves; all fat goes into the pail. 10. The strippings or last milk is five to nine times richer than the first milk drawn. 11. A cow must be in good health, to give rich, wholesome milk. 12. Milk should be skimmed when 48 hours old and sweet.

Button Your Cattle's Horns.

—It is an improvement to their looks, which is important whether you want to sell or keep them. It checks the bad habit of hooking, and they should therefore be put upon young cattle. If the old ones have already formed this habit, it prevents mischief, and all the animals fed in the same yard eat more quietly and thrive better.

Restraint On Breachy Cows.

—Otis Ford, and a good many other farmers too, no doubt, keep their cattle from tearing down fences by bending a wire as large as a pipe stem so as to clasp in the nostrils of the animal, and then tying a piece of stout twine in this nose-jewel, on one side. Pass it through holes bored in the tips of each horn and back to the nose, where it is drawn moderately tight and tied. This plan presupposes that the animal has horns, and that they are of a shape adapted to the purpose.

Stone vs. Tile Drains.

"L. M. B., Scarsdale, N. Y. "I have stones convenient, and wish to know if they will be as cheap, and serve as good a purpose, as the common tile drain."—We believe it is the unanimous testimony of those who have tried both, that tile drains are the cheaper and better. The ditches have to be made much wider for the stone, which takes more labor, and unless there is a duct at the bottom the stones are soon clogged with mud and sediment, and the drain is spoiled. James S. Manroe, of Lexington, Mass., as reported by R. M. Copeland, drained a bog of thirty acres ten years ago, experimenting with stone and tile. Although the stones were near at hand and the tiles cost two cents a foot delivered upon the ground, he found that the

stone drains cost about 15 per cent the most. A part of the stone drains were without any duct at the bottom, and these filled so much in six years, that they had to be relaid. Those which had ducts choked more or less in five years, and the tiles were working satisfactorily after eight years. We do not know of an experienced land drainer, who does not prefer tiles. The stones are best used for the bottoms of walls and for filling up low places.

Free Martins Again.

"J. W. G., Lowell, Mass., writes: "Three of us neighbors, all old subscribers to your paper, have cows that brought twins; in each case one of the twins is a bull and the other a heifer. We want to raise them, but first want to know if it is true that they are not good for breeding."—Heifers coming thus, seldom, or more often than otherwise, do not breed. The name "free martin" has been given to them. They are often raised with a view of making beef of them at three or four years old, and most delicious beef they become. Sometimes they are broken to the yoke and matched with a twin brother, made a steer. The bulls, if used for breeders, are said to be frequent getters of free martins. We suppose there is little doubt that twin animals are more apt to bear twins than are others. A free martin has, if barren, a peculiarly ox-like look.

Potatoes on Sod Ground.

"H. P. H., Vinton, Ohio. "I want to plant potatoes next spring in sod ground, where sheep have been fed for two or three winters. When is the best time to plow, and how wide should the ground be marked? Should I plow or both ways? How often should the ground be plowed, and how often should the potatoes be hoed? How should they be cut, and how many pieces in the hill?—A good clover sod is one of the best preparations for potatoes. Any tougher sod is good to make a crop, and to guard against rot. The objection to it is the difficulty in getting the sod mellow enough for easy working. If plowed in August or September, the sod rots well. If plowed in the spring, it should be done deep enough to admit of cross-plowing without disturbing the sod. Harrow very thoroughly. Mark out the rows both ways thirty inches apart. Bush harrow just before the potatoes are up, to kill weeds. Start the cultivator or Share's harrow a week or ten days later, going as near the potatoes as possible, and stirring all the surface soil. If the tops have a light covering of dirt it will not harm them. Cultivate them the second time the other way of the rows. Two or three eyes to the hill are enough. Go through the potatoes a third time, to pull weeds. This often makes a difference of twenty-five per cent in the yield. If the ground is made smooth and mellow, the hoe will hardly be needed. The advantage of hills over drills is that nearly all the weeds can be reached with the cultivator, and the expense of hand hoeing be saved. If the land is very rough and full of sods, the hoe must be used. Unless planted very early, cut into pieces with one or two eyes.

Tiles for Roofs.

"C. S. T., Stenbenville, O. "Is there any manufactory of tile for roofing in this country?"—We think not. This style of roofing is superseded by better articles. Tile is very heavy, and requires much heavier timber than is now used in buildings. Slate is quite as durable, much lighter, and we have inexhaustible quarries that need working.

Muck Mining.

"W. R. D., of Crawford Co., O. says he took our advice and went to mining muck as if he had faith in it, and "in digging a little deeper than usual found a substance (of a grayish color when dry) from one to five feet deep, overlaid with pure muck or peat, three to eight feet thick."—Our correspondent's experience is like that of multitudes of others. The bottoms of the peat beds are usually deposits of exceedingly fine silicious or calcareous sand, frequently filled with the remains of shells or minute animal organisms. They are seldom of any considerable value as fertilizers, except when calcareous deposits are found in large quantities, as is often the case. This layer, which is impervious to water, consists often almost wholly of small shells, the larger of which are of the size of mustard seeds or wheat kernels. Such a deposit is called shell marl, and is usually valuable as a manure on soils needing lime, and may pay for carting two or three miles.

Onions.

"N. J., Davenport, Iowa, asks if "we can get onions the first season from seed grown in California."—It is not probable that the place where the seed is raised will make any difference in getting onions, but if our correspondent expects such onions as are raised in California, he will be disappointed. We have known seed from New Mexico, where the onions are as fine as those of California, if not finer, to produce only common onions at the East. There seems to be something in the soil or climate, or both, of these States particularly favorable to the production of onions.

Foul Water in Cisterns.—"A Reader" says that the cisterns for watering cattle in his vicinity have become foul, and wants to know a remedy. This is occasioned sometimes by the falling in of earth worms or rats from the top, which die and putrefy. The remedy for this would be the cementing of the top of the cistern so as to keep out the worms and vermin. Sometimes the cistern has no ventilation, and the water is drawn by a pump. If the cistern were opened and an endless chain pump or a bucket with windlass were introduced to draw the water, the difficulty would be remedied. Even in wells the water is thought to be benefited by frequent agitation. Cisterns should be thoroughly cleaned once a year, and it is a safeguard against untimely cracking to make a wash of hydraulic lime and brush over the inside.

Soft Water Turning Hard.—"Subscriber," Still Pond, Ind. Locust trees growing near the well can have nothing to do with the change of the water from soft to hard. Some subterranean stream of hard water has probably found its way into your well, and it is not easy to suggest a remedy.

Inspecting the Bottom of Wells.—"L. L. P." Cricksburg, N. J. All wells should be examined at least once a year, and thoroughly cleaned if there is any indication of filth upon the bottom. This is best done in the morning or afternoon of a clear day, by holding a mirror over the top, and reflecting the sunlight into the water. If the water is clear, everything upon the bottom can be seen with great distinctness.

Cement Pipe for Drains.—"J. M. J." Danbury, has four or five acres to drain, and wishes to know which are the best tiles, the red earthen, or the cement, and how long the former will last in the soil. Cement tiles are used for carrying water, but not for drainage. Common red drain-tiles allow the water to pass into them at every joint, and are the best article for draining land yet discovered. It will made and sink below frost, they are as indestructible as any other brick. Examined after fifty years' use, they are apparently as good as ever.

Increasing the Flow of Springs.—"O. C." Amenia, N. Y. "I have a spring not high enough to carry water into the second story of my house, and not copious enough to force the water by a ram. Is there any way to increase the flow of the water in the spring?"—"If the ground in the neighborhood of the spring is wet enough to need drainage, put down tile, and make the outlet at the spring or near it. If the slope of the ground is sufficient to admit of laying the tile 4 or 5 feet deep, you will very likely get permanent water, and make it as copious as you desire by extending the drains. Water from tiles deeply laid is often as cold and as pure as that from a natural spring. Deep drainage sometimes increases the flow of springs, even where the outlet of the drains is turned in another direction. Layers of sand or coarse gravel are struck, which communicate directly with the spring, and the water flows through from the drains to the natural outlet.

Bones and Wood Ashes.—"S. J." Ontario. You can hardly do better than to crack up the bones somewhat, mix them under a shed with the ashes, using, we will say, three bushels of ashes to one of bones, moisten them slightly but thoroughly, cover them with three inches of soil lightly packed down, and leave them so until spring, when the heap should all be shoveled together, and all the bones that cannot be mashed, thrown out. We have never done this exactly, but have repeatedly heard that it would work well.

Dry or Greasy Bone-Dust.—"Deek Bros., Litchfield, Conn. Having put up a mill for grinding bones and plaster, wish to know which is best for the land, dry or greasy bone-dust. Dry bone-dust is usually that which has been boiled to extract the oil; with the oil a large portion of glue or gelatine is also abstracted. In the soil the grease prevents decomposition of fresh bone for a while, and then hinders it for a still longer time. So the dust from boiled bones, or the dry bone-dust, acts more rapidly, while the other is worth more to the soil, being more lasting in its effects and containing more ammonia-forming material.

Harness Makers' Clippings.—"R. M. C." Del.—"Do harness makers' clippings make valuable manure, and if so, what is the best way of reducing them?"—"They are a good manure, as all animal matters are, but it is somewhat difficult to reduce them. They can be roasted and ground fine. Or, if the mill be wanting, they can be mixed with caustic lime, and the slaking and heat will help to reduce them. Wood ashes or

potash will also act upon them, so that they will decay in a compost heap. They should be kept in a moist state for several weeks in contact with either lime or ashes.

Grinding Limestone.—"D. D. & Son," Allegheny, Pa. The grinding of limestone would not pay for manure under any conceivable circumstances. It is much more easily reduced by burning, and then slaking it in water. In this state it has an immediate effect upon all soils well supplied with vegetable matter. A limestone soil is good for almost all farm and garden crops. For burning lime and applying it to the soil, see articles in Volume 26, 1897, pages 243, 253, 321, 322, 335.

The Best Stock for Pastures.—"H. A. T." Milton, Pa. If the object be to enrich the land, sheep are the most desirable stock. They leave all their droppings upon the field, and distribute it very uniformly as they graze.

Bones and Ashes.—"S. J." Bowmanville. These articles are very good used separately or together. Coarsely broken bones are good placed in the holes or borders, where fruit trees and vines are planted. Ground, they make a good dressing for all farm crops, and are especially valuable for turnips and cabbages. Treated with sulphuric acid and water, they make superphosphate of lime, which is an excellent concentrated fertilizer. (See back Volumes.) Ashes are a good top-dressing for almost all farm and garden crops, and are especially valuable for fruit trees. They may be used for reducing bones by adding lime, mixing the bones with lime and ashes in a barrel or larger vessel, and pouring on water. They should be kept constantly moist. In a few weeks the bones will be soft, and may be mixed finely with the lime and ashes. If used in the bill, do not bring it in contact with the seed.

How to Kill Woodchucks.—"H. R. P." Old Westbury. Woodchucks are more easily trapped than most animals that infest our farms. They have not cunning enough to keep out of a steel trap properly set at the mouth of a hole. They are easily shot, and the boys are in favor of this mode of despatching them. In a clayey soil they are easily drowned out, if water is near. Some explode gunpowder in the hole after stopping it up, which is said to make short work with them. Strychnine, administered on a sweet apple, or any thing that they will eat, is effectual. If this is used, care must be taken to put it where nothing else will eat it.

A Volunteer Mother.—"G. Simon, of Bloom, O." has a Black Spanish pullet which had never laid, that took charge of an abandoned brood of turkeys, clucking and caring for them as if she had hatched them. Similar facts are occasionally reported, and it is said that the maternal instinct may be developed by plucking the feathers from the breast of a pullet, or a capon, and confining it a few days with young chickens.

Moles Again.—"It never rains but it pours," and we have still another device for keeping moles out of cultivated grounds. R. W. Flower, Jr., Erie, Pa., writes: "When on a farm in Virginia before the war, a neighbor put up a small wooden windmill. (Similar to the enclosed sketch,) on a pole about 12 feet high to scare off crows from a water-melon patch just planted. It was soon noticed that the moles, which had been unusually plenty had all left the field. Generally in that section of the State, from two to four mole ridges could be seen running to each hill, before the above plan was adopted. Each wheel seemed to protect a piece of ground at least 300 yards in radius. The cause for the moles leaving so suddenly could not be surmised for some time. One day when on the field I suggested it might be the sound from the wheel, and upon putting my ear to the earth about 100 yards from the wheel, the sound could be distinctly heard, the earth being such an excellent conductor of sound. The wheels are very simple and easily made, and almost every farm boy has one stuck on the smoke house or henery, as a weather vane."

Fermentation of Apple Juice.—"A subscriber asks if cider, fresh from the press, will ferment if immediately bottled and made perfectly air-tight. Ans.:—Apple juice, coming from the press, always has sufficient contact with the oxygen of the air to induce fermentation. Air, in fact, penetrates the fruit itself; if the pressing were to take place in a space from which oxygen were excluded, fermentation would take place.

What Missouri Wants.—"Our correspondent "W. B. J." expressed himself a little blindly, we think, in what he wrote. "We have paid high prices for our sheep, and now we are worse off than if we did not have any, as we cannot get the wool carded, and can

not get any more for our fine wool than for our coarse wool." He means they are worse off than if they had no high-priced, fine-wool sheep, and that is probably true. His statement is taken up by "J. M." of St. Louis, who probably did not notice the preceding sentence—"We have some fine sheep, and want more." He writes:

"What we want in Missouri, to make wool-growing and sheep-raising profitable, is men who understand the business. Nowhere on the continent, in the same latitude, has nature furnished better adaptations for sheep husbandry. We have immense quantities of rich lands, as yet untouched by the hand of the husbandman, in almost every county in the State, admirably adapted to this business. Good, unimproved land sells in almost any county at from \$3 to \$12 per acre. Of course, the rate per acre above this, for improved farms, is regulated mainly by the cost of the improvements, and somewhat by neighborhood, or other surroundings. Anywhere south of the Missouri river, (which embraces more than half the State) by judicious management, sheep can be raised, with winter feeding for one to three months in each year—say an average of two months. I have, indeed, seen (an exceptional case) a flock wintered, seventy miles north of the Missouri, without any feeding at all, and come out fat and hearty at shearing time. 'Wool is now quoted at from 28 to 33 cents per pound, and '3 to 10 cents lower for dirty and burry.' In the live-stock market, sheep are quoted at \$1 to \$1.50, for inferior, ranging all the way up to \$3 to \$3.50, for No. 1 mutton. Your readers can tell whether or not they can thrive at growing and raising mutton sheep at the prices I have quoted." [No doubt they can, if they avoid fancy-priced fleeces, and raise long-wools, as "W. B. J." would advise, and get more for both wool and mutton.—Ed.]

Florida Farming.—"J. H. Donnelly, Fernandina, writes that on land where he raised 5 bushels of corn to the acre he put in about 2 acres of tomatoes and shipped them to New York, for which he got about \$20 a acre. He used no manure. He planted 2 acres of cucumbers, manured the hills, and raised a good article, with the exception of their tendency to turn yellow at the vine end, which injured their sale in the New York market. The yield was prolific with a very dry season. The seed was a long, green variety. He says there is a great prejudice against the use of manure; and adds: "My land is extremely dry in its nature. Would you recommend manure? If you do, what kind? There is plenty salt muck about here, and it adjoins my land. How should I prepare it to make a good fertilizer, and how long will it take to decompose?"—This prejudice against manure is very common in the South, and accounts for the large territory known as "old fields," and "abandoned plantations" in all the cotton-growing States. Wherever manure has been introduced, it is found to pay quite as well as elsewhere. Guano and superphosphate, if good, pay well on the cotton crop, and much better in market gardening, where two or three crops can be grown each season from the same fields. The soil, from the description given, needs vegetable matter, and will be greatly benefited by turning in green crops, (corn, for instance, or good stable manure, if it can be had). Compost made of salt marsh mud will make an excellent fertilizer, and, by absorbing moisture from the atmosphere, will, in some measure, guard the soil against drought. It can be decomposed by lime or ashes, or by any animal manure. If exposed to the atmosphere a few months, and forked over, and made fine, it would benefit the land without any addition.

Express Charges too High.—"We have numerous complaints from different parts of the country about Express Companies charging exorbitant prices, and some of our friends compare these charges with the postage by mail on seeds, etc., in packages of four pounds and under. Now it would be idle to expect the Express Companies to compete with the government in the carrying of such packages, as it would not pay. Something may, however, be done, towards keeping expressage within reasonable limits. In all cases, where practicable, parties sending should arrange with the Express Agent the exact charge for the delivery of the package to the party who is to receive it, or at the Express Office nearest its destination, and give notice of this agreement by mail. Then keep good natured with the officers and employees of the Companies. A long experience proves to us that much more can be accomplished in this way than by scolding and fretting. If drivers are impertinent, appeal to headquarters, but don't get vexed, for in most places the Express Companies have the monopoly, and of course an advantage. Remember that many people can be coaxed who cannot easily be driven.

Milking Stock for the South.—"C. Altmann, La., wants a good bull to breed with the native

cows. He says: "We all have cows, but of an inferior kind, and no thoroughbred bull could be found in this parish. 'Point Coupe.' Our object is to have cows which will give rich milk in good quantity; and I would request you to inform me what breed would cover these points best in our warm climate, and at what probable price a 1 or 2-year-old thoroughbred bull might be bought in the North and delivered in New Orleans."—The Devon stock has been tested in warm latitudes, and is said to do well. We should think the Ayrshire also would do well, and their reputation as milkers is rather better than that of the Devons. Procure a bull of a good strain of blood, and the grades will be likely to meet your wants.

Popular Deciduous and Evergreen Trees and Shrubs, for planting in Parks, Gardens, Cemeteries, etc. By E. R. Elliott. New York, Francis W. Woodward. This is a hand book of 123 pages, in which are pointed out the leading characters, uses, etc. of those trees and shrubs most generally employed in ornamental planting. So experienced a planter as Mr. Elliott could not fail to give much information which would be of service to the novice, who will find here just the practical points which most horticultural writers are apt to omit. As the work professes to be simply a guide in planting, it is not necessary to criticize its botany or its illustrations, which are equally good or equally bad—we are not quite sure which. Price \$1.50.

Sod Fences and Ditches.—"G. W. M." Sod fences and ditches turn cattle, but not sheep and goats well. They will stand the weather several years with very little repairs, if well made.

"Pepper Tree."—H. H. Howard, Lake Co., Miss. Your "Pepper Tree" is *Schinus molle*, and belongs to the same family with the Sumachs. It is a native of Peru and other parts of South America, and is in common cultivation in warm countries. We hope to say more about it at another time.

The Western Beauty Apple.—Mr. S. R. Bailey, Lima, O., has sent us specimens of this very large and fine apple. The tree is a very vigorous one, and the leaves remarkably large, being sometimes six inches long and half as broad. This fruit is supposed to have originated in Ohio. Warden gives it high praise, and places it among the best in quality. "Flavor subacid, vinous, delicious, satisfying," describes the fruit as we found it. The season, September to Christmas, but it may be kept until March.

Injuring a Vineyard.—J. R. Hoessli, Onondaga Co., N. Y., asks if the State has the right to raise the water in a lake to the injury of the drainage of his vineyard. This is a question in law, which does not fall within our province.

Apple Melon.—"C. S., " Wilmington, Del. The melon you described is the Apple-seeded Watermelon. Thorburn and Bliss & Son, of this city have seeds.

A Girdled Elm.—"Disconsolably Unhappens." Potsdam, N. Y., has a fine Elm which has, by mistake, girdled with an axe, and he asks how to save it. If the tree is a large one, we fear it is a hard case; still we should try, by bridging over the injury by means of pieces of elm, with the bark on, fitting them carefully, so that the new wood of the pieces and that of the tree will meet as nearly as possible. The parts where they join should be freshly cut, and the whole covered with a mixture of clay and cow dung, bound on with old cloths. The top should be cut back severely, to diminish the evaporating surface.

Cranberry Queries.—"M. K. B., " Nor-folk, Mass. Spring is the best time to plant Cranberries. Eastwood's is the only work we have on the subject.

The Trotting-Horse of America.—This is the title of a very neat 12mo. volume, by Hiram Woodruff, edited by Mr. C. J. Foster; published by J. B. Ford & Co., New York. Hiram Woodruff was by far the most successful, widely known, and respected professional trainer of trotting-horses in this country. His familiarity with the most famous horses was life-long almost, and being possessed of a clear, quick, shrewd mind, and an uncommon degree of common sense, with a remarkable memory, his influence among horsemen was very great, and the present high character of the trotting horses of this country is in no small degree due to him. This book was written chiefly from "Hiram's" dictation. It was published in chapters in *Wilkes' Spirit of the Times*, and now, as soon after the death of the

famous trainer as possible, it is given to the public, and will be found of great interest to all who love a good horse. The first eleven chapters, together with others scattered through the book, are chiefly instructive on handling, feeding, training, etc. Others are reminiscences of the trotting turf, told in a very pleasant way. It contains 412 pages, with a portrait of the author, and will no doubt meet, and worthily, with a very extensive sale.

Postage 12 Cents a Year in Advance.—The postage on the *American Agriculturist* anywhere in the United States and Territories, paid in advance, is 3 cents a quarter, 12 cents a year. If not paid in advance, twice these rates may be charged.

Flower Seeds.—Some time ago we published a communication on flower culture, from Miss O. M. Luke, Ohio, which brought her a large correspondence. She wishes us to say that ill health prevents a reply to her letters, and that the flowers about which inquiry has been made were from seeds and bulbs obtained from J. M. Vick, the well-known seedsman, Rochester, N. Y.

Profitable Use of Land.—"H. A. N." wishes to know how he can use five acres of good land to the best advantage. He is one hour by rail from the city. This depends so much upon the man and his circumstances, that we can give no very definite advice. If he lives upon the five acres, the best thing to be done is to make it tributary to the supply of the family and the domestic animals kept.—one or two horses, two cows, poultry, pigs, etc. The horses and cows are best kept by selling, about which much has been said in our past volumes. A half acre will be needed for a vegetable garden and small fruits, and another half for larger fruits.

Work on the Horse.—"J. L. W., " Providence, R. I. Inquires for a work on the Horse,—one that treats the subject in a plain, practical way, and that is reliable as far as any book is in its statements. Herbert's *Hints to Horsekeepers* will probably meet the wants of our correspondent as well as any book in the market. Price \$1.15. The same if sent by mail.

Men and Fruits.—In that most charming and now almost forgotten "Fable for the Critics" of Lowell, he takes of the literary men of his time. He describes Hawthorne as being made of particularly fine clay, and as old Dame Nature was at the task of mixing she sang, and somehow the music got mixed with the clay which resulted in Hawthorne. In looking over the fruits produced by our pomologists, we have thought sometimes that their qualities and peculiarities became in a similar way blended in their productions. To illustrate from strawberries. Who could have produced such a plump, juicy, productive berry, with a good bit of spice in it, but just McAvoy himself? "Downer's Prolific" and his later "Charles Downing," in their unpretending, sterling, and reliable qualities typify our old friend Downer of Kentucky; and the latest candidate, "President Wilder," considering its origin, could it be any other than the rich, polished, perfect fruit that it is? Of course there is nothing in it—a fancy—nothing more.

An Egg or Two, or a Poor Cigar, each Week, costs more than the subscription price of this journal, with all of its fine engravings, its calendar of hints, its many items of information given in the "Basket" columns, and in its farm, garden, household, and children's departments!

The "Leaven Manure" Humbug.—One Palmer, of Dutchess Co., N. Y., issues a very shrewd circular, well calculated to deceive even pretty well read farmers. He claims to have a secret, and a secret leaven for making manure, and we believe also a secret manure. He sells, or wants to sell, "Rights" for \$25, and to all who take them he proposes to furnish a book of 200 pages, which is to be published "as soon as circumstances permit," which will tell where and how he obtained the leaven, and many other things. Besides, a receipt book of 24 pages is furnished, and the daps will be told also how to make guano "powerful yet harmless," how to make pondrette, bone-dust, chloride of lime, a substitute for plaster, etc., etc. Finally, Mr. Palmer wishes to engage those who give him \$25, to help him in his real estate and stock brokerage speculations. This man is no fool, though if we did not know to the contrary, we should say he were next to one, to expect a single sane man to pay him \$25 for the right to allow him (Palmer) to furnish him a book by and by. We have little doubt many a daps will be found, and some, perhaps, will think that their \$25 is well spent. Palmer has probably been reading that little pamphlet now issued by the publishers of the *American Agriculturist*, called "Bommer's Method," which probably covers almost exactly the

same ground. The circular about the Leaven is so full of chemical and other blunders, that they appear to us to be willful misstatements. It is endorsed by a dozen or more certificates of people whom we do not know, but who may be very honest, good farmers; and the same may be obtained by any deceiver. If the trial sample of the manure he were to furnish were really good. Let secret things alone, as a rule; where there is real merit, there is no need of secrecy to make a thing go. "Bommer's Method" costs 25 cts., and is well worth it, though we do not endorse it at all, and we do aim to give our readers sounder views on the same subjects every year.

More Labor Wanted on the Farm.

A thriving farmer to whom we put the question, What item of expenditure pays best in your operations? answered "Labor." He had then in the field six men and kept them constantly at work for nine months in the year. He had but sixty acres of land, yet the gross products were about fifteen thousand dollars a year. A single item in this year's crop was 6,000 bushels of seed potatoes. His rough farm was rapidly rounding into form under his plastic touch. Old stone walls had been removed, and the small fields opened into large ones. Rocks had been blasted and sunk, and the rough places made smooth. The wet places had been made dry by deep drains. He subsoiled, and guarded every crop against drought. He kept at work upon improvements, and made the crops pay for them. He said he regretted nothing so much as that he had not employed more help. This clear-headed farmer is unquestionably right. Nothing pays so well as labor, even at the present high prices. Almost all farm products have advanced more than labor in the last eight years. And if this were not so, we think in the single item of improved implements the farmer has an advantage that more than balances the increased price of labor. He can make hay cheaper with these tools to-day than he could ten years ago without them, though he pays a third more for labor. Yet many of our farmers doubt this, and continue to apply the labor of one man to a hundred acres, and call it economy. We have no doubt it is the most expensive mode of applying labor. Almost every thing can be made cheaper on a large scale than on a small one. The publisher makes very little on a thousand copies of a work; on a hundred thousand he would make a small fortune. It will not pay to build a factory and use power looms to make cloth for the use of one family; to clothe the people of a State it is a very good business. Most farms have every requisite but labor to grow four or five times their present amount of crops. They have land enough, and often all the materials for making manure. They lack the men to haul the sea-weed, the muck, or the marl, to burn the lime, and to handle the compost. For lack of labor three-fourths of their capital lies idle, or pays them barely two per cent per annum. One great advantage of plenty of labor upon the farm is the ability to do every thing at the fitting time. Nearly half the expense of handling muck is saved if it is dug out in a time of drought. Three-fourths of the labor of tillage is saved if the men are put into the field as soon as the weeds are in sight. Every crop is followed up with timely care, and is raised at the least cost. There are improvements that almost every farmer has upon his mind that never get done for the want of labor. He knows that underdraining is paid for by the extra crops of two good years, leaving the land more than doubled in value for a lifetime. He never finds time to do it. He knows that manures pay well, yet he never makes half the amount he could use to

advantage. We need to do business on a larger scale to make farming pay better. We must have faith in our calling, and invest capital as liberally as the merchant or manufacturer does in his. There is much less risk in our business. We can afford to make our ventures larger. As a matter of fact the farmers who make the most money in this country are those who employ the most help, and most wisely direct it. In England they will often spend more capital and labor in manuring and working an acre of land, than we do in its purchase with the expense of manuring and working added. At this season, when we sum up results and forecast the future, let us plan to use more labor.

Silk Culture in California.

BY THOMAS A. GAREY.

[Since the following communication came to hand, we have received from Mr. Prevost a neat and useful hand-book on Silk Culture, and from Mr. Garey, through the politeness of Mr. T. B. Austin, several hundred cocoons of remarkably large size and fine appearance. The fact that perfectly healthy eggs can be raised in California is of importance to every one who uses silk, as the disease that prevails among the silk-worms of Europe has already produced great distress in the silk-growing regions.—*Ed.*]

The cultivation of the Mulberry and feeding of silk-worms was commenced in this State by Mr. Louis Prevost, of San Jose. Being well acquainted with the requirements in soil and climate for the successful culture of silk, he became satisfied that this climate was peculiarly adapted to the business. After a few years spent in observation, he was induced to try the experiment of importing silk-worm eggs, having already planted Mulberry trees preparatory to the enterprise. After a number of unsuccessful and discouraging attempts to import eggs, he at last succeeded in obtaining some in good order from China, and from these date the first silk-worms of California. It has required years of labor, and the expenditure of thousands of dollars by this indomitable spirit, to establish this business on a respectable basis.

An old and deep-rooted prejudice, growing mainly out of the "Morus multicaulis" excitement, had to be uprooted. State and county fairs regarded the enterprise with a suspicious eye, and paid but little or no attention to his exhibitions of cocoons, while at the same time they awarded premiums to many things of no practical importance whatever.

But faith and perseverance at last prevailed, and the present exhibition of silk cocoons from all parts of the State, at the Mechanics' Fair in San Francisco, attracts an attention from visitors truly wonderful. Old and established prejudices are disappearing, and the people begin to see and understand that the failure of this business in the Atlantic States was entirely attributable to climatic influences.

We have a soil unsurpassed for the production of the several varieties of the Mulberry required for the successful feeding of the silk-worm. We have a climate unequalled for its evenness of temperature, with an entire absence of explosive electricity and showers of rain during the feeding months. As the result, our worms are perfectly healthy, each worm making a cocoon, with no percentage of loss from any cause whatever.

Mr. L. Prevost, the pioneer, has from time to time sent eggs to different parts of the silk-producing districts of Europe, from which continuous good reports have been received. And

in consequence of the disease among silk-worms in those countries, they are compelled to import all their seed or eggs. The California eggs have established a reputation far exceeding the most sanguine expectations of Mr. Prevost. The consequence is, he now has standing orders for all the California eggs produced. As the production of silk is an exceedingly profitable business, and the production of eggs vastly more so, the people of this State are beginning to engage in this business with a thoroughness characteristic of California, and in a few years we will be able to supply the Old World with eggs of a better and healthier quality than can be obtained elsewhere. Now for a few items and figures in relation to the profits of the business, which have been demonstrated by practical tests by myself and many others. According to our simplified silk culture, one hand, man or woman, or a boy or girl 8 to 10 years old, can feed and attend, from the hatching of the eggs to the cocoon and laying of eggs, 100,000 worms. The cocoons produced will weigh about 338 lbs., worth, at lowest rates, \$1.50 per lb., amounting in round numbers to about \$500. The time occupied six weeks.

But by producing eggs, we find a much better return. For instance, we select one-half the crop, (for we select the very best only for eggs,) 500,000. It requires 100 pairs of cocoons that weigh a pound to produce an ounce of eggs. Consequently, we have 250 ounces, worth at present from \$8 to \$16 per oz., but putting them at the lowest probable wholesale rate, say \$4, they amount to \$1000. Add to this \$150, the value of the cocoons from which the moth has emerged, and \$250, the value of one-half the crop unfit for the production of eggs, and we have in the sum total the handsome sum of \$1350, the result of the labor derived from one hand, six weeks. This may appear at first glance chimerical, but when we take into consideration the pressing demand for eggs for export to countries where they must have them, and that California is about the only place where they can be obtained, it can be seen at once that this is no fancy sketch. It is practicable to feed a limited quantity of worms upon Mulberry plants, the first year from cutting, so rapid is the growth of the tree in this soil and climate. Here we have an industry within the reach of our small farmers, which can be prosecuted without any detriment to the ordinary course of farming.

We fear no competition, for our market for silk is the whole world. And if all the farmers of California could enter into this business within one year, it is my opinion it would not lower the price of raw silk one cent per pound.

With a general dissemination of the knowledge of the advantages of this as a silk-growing country, it is evident that in a very few years the State of California will rank with any of the silk-growing countries of the world.

RIVER AND POND MUD FOR TOP-DRESSING.—

We recently visited a luxuriant pasture in the Valley of the Bronx, and supposed from the appearance of the grass it had been recently laid down, or dressed with stable manure. On inquiry we found it had been well covered with pond mud from the adjacent river two summers before. The owner informed us that it was once a poor pasture with plenty of wild carrots and other weeds, and little grass. The summer was dry, and he drew off his mill pond, and carted out the deposits of mud, and spread them. The land had not been plowed or seeded. He

thought it would cut over two tons of hay to the acre, if he did not prefer grazing it. The mud was not seasoned, but was drawn directly from the river bed and spread upon the land. Pond mud seems to act more immediately upon the grass than muck or peat. It is frequently made up of the wash of cultivated fields, and of decayed leaves. There are nooks and eddies along almost every stream where this article collects. Pond mud is an excellent top-dressing for grass lands and should be saved.

Measurement of Farm Land.

It is seldom necessary for a farmer's measurements of his land to be perfectly exact. He generally can pace it near enough for his common uses, that is, near enough for estimating the amount of seed, manure, etc., he needs per acre, the length of fence he needs to provide for, etc. It is, however, very much more satisfactory, and usually more profitable, to measure and know much more nearly the size of the pieces of land cultivated. The measuring rod and tape are nearly as important to the careful farmer as the scales and half-bushel measure. It takes two men, or a man and a boy at least, to carry a chain or tape line, and a farmer is often loth to take off his hands from important work, while he is very willing to spend time in walking over his fields measuring and planning for improvements, and for future crops, or estimating the yield of crops already garnered.

William Hull, of Hill-top, Pa., saves himself trouble by the little contrivance which we figure, and of which he writes as follows:

"Take two strips of board, three quarters of an inch thick, an inch wide, and 5½ feet long, fasten the tops together with a screw, or with shingle nails, spread the bottoms exactly 5½ feet apart, and nail a strip across about 2 feet from the top, and you have a pair of rough compasses or dividers. Point the bottoms, and it is ready for use. Put your hand on top, and turn it as you walk along; three spaces will make a rod. I find it saves a great deal of guess-work."

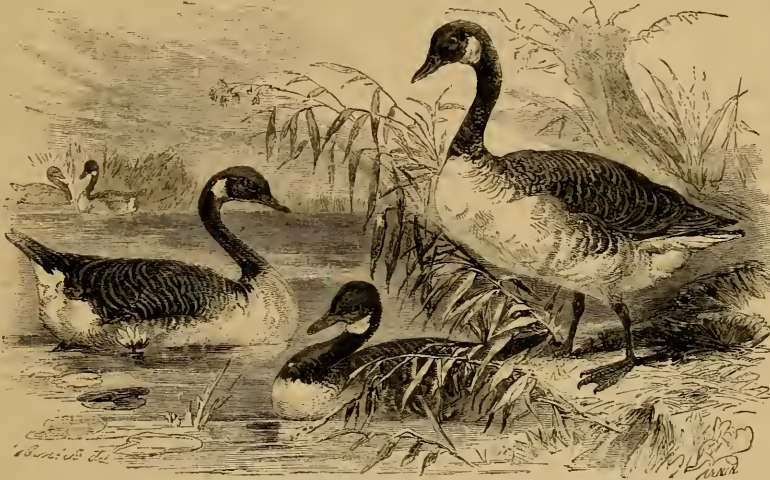
It must be borne in mind that this instrument will give but very little more accurate results than pacing unless it be moved in a direct line. It is hard even to walk in a straight line unless one has practice, and still harder would it be to carry such a measuring implement. Two points must always be taken, one near and one distant, and the near one be made to cover or half cover the distant one all the time. Thus a line will be very nearly straight. This affair, and the difficulties attendant upon its use, suggests another implement on the same principle, which the writer intends soon to make, thus: Take three sticks exactly 5½ feet long, bore a gimlet hole in the exact middle of each, and fasten them together with a long screw or bolt which shall pass through the ends of two similar sticks, (they should be 2-inch pine, 2 inches wide.) The three which are fastened together at their centres should now have their extremities placed equally distant. They will be exactly 2½ feet apart, and should be fastened so by means of strips of lath, nailed on six or eight inches from the ends. These are then to be sharpened to marked points just 2½ feet apart, and when done, we have a wheel which will measure one rod at each revolution, and may be pushed before one walking, using the two outside pieces as handles of a wheelbarrow as used.



The Wild Goose.

We have the pleasure of presenting in illustration of this article an unusually fine representation of the Wild Goose, which is the most widely disseminated and best known, perhaps, of our large water fowls. It is a bird of striking beauty, both on account of its brilliancy of plumage and its grace upon the water. On land it is, like the common goose, dignifiedly awkward; but this awkwardness never degenerates into that blundering ungainliness which makes the domestic species a by-word. The common goose is no fool, but only a blunderer. The wild goose is not only intelligent beyond what we should expect, but apparently philosophical; this is shown in many ways. Almost every one is familiar with the order in which a flock arrange themselves for a long flight. The most powerful gander is the leader, and cleaves the air, while the others follow in his wake, usually in two files like a \succ , one leg being frequently longer than the other; and frequently, also, the whole flock, if it be a small one, arrange themselves in a single file. When a change of level, fright, weariness, or any cause, effects an irregularity in their flight, uttering a few warnings and answering "honks," they rearrange themselves and dress their ranks, like a platoon of soldiers by the elbow touch. It is thus that the wild geese make their semi-annual migrations to and from the northern portions of the Continent, where they spend the summer and breed, and the swamps and lagoons of the Southern States, where they winter. These migrations are made earlier or later each year, according to the prevailing temperature of the season. The flight of wild geese northward, in considerable numbers, is regarded by the weather-wise ones as an infallible harbinger of settled warm or warmer weather; and their southward flight is soon followed by wintry weather. Sometimes they are caught in the spring making a mistake, and by some means they become aware of it hours before a cold storm, and re-

treat. When they are seen flying South in good order in the spring, look out for a cold snap. The wild geese which follow up the Atlantic coast in the spring and return by the same route are rather slyer than those of the Interior. They are, besides, rarely so fine and fat in the autumn.



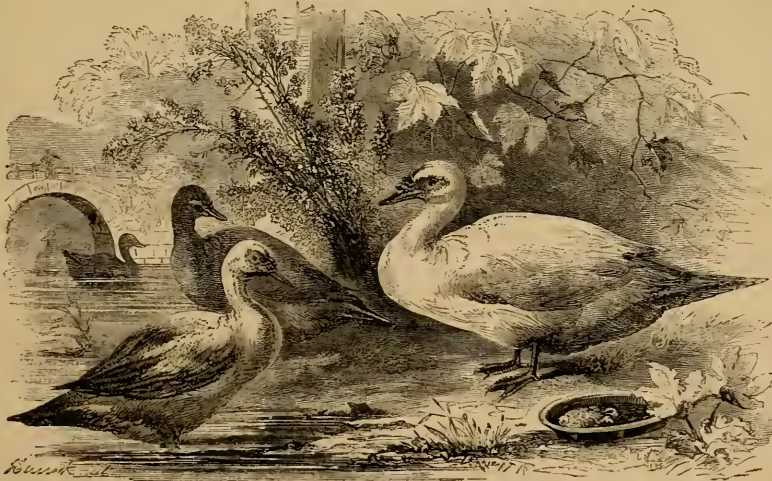
WILD GESE.—(*Bernicula Canadensis*.)

Their flavor is different, also, from the peculiar kinds of food they get. A Western wild gosling is one of the most delicious game birds imaginable. It is esteemed by amateurs superior to the Canvas-back duck, and it is, of course, much larger. The markings are exceedingly uniform, and the Ganders are distinguishable from the geese only by a little greater brilliancy of plumage. The head, neck, bill, legs, and

body smoky brown, the edges of the feathers being lighter, shading off rather abruptly from the back, and growing grayish towards the belly; tail feathers black; flight feathers dark, blackish-brown. Length of the bird about 35 inches. Total length to end of tail 43 inches; widest extent of wings 65 inches. The naturalist Wilson says, and most writers follow him, that "the flight of the wild goose is heavy and laborious." We think, on the contrary, it is easy and rapid. If a flock passes over very near an observer, he will be convinced of the great speed at which they fly. Seen at a distance, we judge of their rapidity and ease of flight by the time it takes them to pass their own length, and forget that a wherry will go its length a dozen times, perhaps,

while a great ship moves its own, and yet the ship may go twelve times as fast as the row-boat. The power of the wild goose may be judged by the ease with which it will lift its ponderous body, weighing 8 to 12 pounds, and often more, from either the earth or the water.

The nest of this goose is usually somewhat concealed, or protected from the winds, and from sight, by rushes or other plants. It is built up several inches high, of leaves, grass, rushes, etc.; it is large and flat, and located near the water. They are occasionally found within the limits of the United States, but this is probably rather accidental than natural. The perfect domestication of the wild goose has, we believe, never been accomplished, certainly not in this country. The instinct to migrate is so strong that though perfectly tame, and having been for months quiet, orderly tenants of the poultry yard, they either



MUSK DUCK.—(*Cairina moschata*).—See next page.

feet, of the wild goose are black; a triangular patch of pure white extends from under the throat and upon the cheeks, ending in a point on a line with and back of the eye on each side; a few white feathers, more or less, may be seen under the eye. The under parts of the body are light gray, with a tinge of purple, (especially on the breast,) passing into white towards the tail, and under the wings; upper parts of the

take flight of themselves, or will join a flock of wild geese that are flying over. These are often called down by the tame ones, and captured or shot. It is necessary to "pinion" the latter; that is, to remove the end of one wing at the last joint. Being therefore unable to fly, they become quiet and domestic, but their young require the same treatment from generation to generation. Audubon says that in the wild

state they rarely lay more than 6 or 7 eggs, while domesticated ones lay 10 or 11. Like other geese they breed in pairs, and a lone gander will often, perhaps always, mate with a tame goose, if one be presented. The progeny of this cross is a hybrid, or "mule," and unfertile. It is, however, a magnificent bird, somewhat resembling its sire in plumage, but the colors are duller and vary considerably. These hybrids are larger than either parent, very fine eating, and under the name of "mongrel geese" bring a great price in the market.

The Musk Duck.

The Musk or Muscovy Duck, (*Chirina moschata*) is a native of South America, but a frequent denizen of our poultry yards. The most noticeable peculiarity of the species is the great difference in size between the sexes. The ducks weigh from four to five and a half pounds, and the drakes just about twice as much. The ducks closely resemble common ducks of the same colors, differing chiefly in the greater length of the body, and in a smaller amount of carunculated flesh upon the head, and at the base of the bill. In the drakes this bloody-red, irregular mass of flesh extends from the bill over the eyes, and covers the cheeks more or less. They are of various colors, from a blue-black, with rainbow iridescence, passing through all shades of bluish-slate color, and all degrees of piedness, to pure white. Yellowish-brown and white ducks also occur. Those breeding pure white are most highly prized as a matter of fancy. They are fair layers. The eggs are of a grayish-white color and not larger than those of common ducks. The duck sits about five weeks, and the young are hardly if not hatched until settled warm weather. The name "Musk" is derived from the scent of the oil secreted in a gland upon the rump of the drake. The appellation "Muscovy," as if they came from Russia, is a corruption. The drakes associate readily with common ducks, and the hybrid produced is a large, fine bird, superior for the table, and easily fattened, but incapable of breeding.

The engravings of these ducks, and also of the wild geese on the preceding page, are portraits by Herrick of specimens in the possession of Mr. Stark, of Manchester, New Hampshire.

Walks and Talks on the Farm—No. 60.

The knolls on my farm are full of stones, and I have determined to get them out. They were put there on purpose to be got out. Darwin ridicules such an idea. (*Animals and Plants under Domestication*. Vol. II, p. 515.) But then Darwin never cleared up land, probably never dug many underdrains, and does not know what glorious fun it is to get out stones. I pity the farmer who does not feel and know that the earth was made for man, and that when his plow strikes a stone it is evidence that that stone was put there to be got out. It was not put there to knock a guard off the reaper, or break a plow point, or batter the harrow teeth, or smash a cultivator; it was put there to be got out. Let this idea once enter a man's mind and grow there, let it be strengthened by his own growth, and by his experience and observation, and it will be of no use to tell such a man that "that stone can't be got out." He knows better. He knows it was put there on purpose to be got out, and he can do it. For forty years the knolls on my farm have been scratch'd over. You cannot plow a rod without striking a stone. Consequently

the land is not half worked, and does not produce half a crop. Of course everything cannot be done at once, and the early settlers had enough other work to do without getting out stones. But now the old rail fences are decaying, and it is time to get out the stones and lay wall. I have done only a little of this work, and feel all the enthusiasm of a beginner. It is not half the labor I expected. We attacked the worst knoll on the farm first. There was about a quarter of an acre. We plowed round it, turning the furrows down hill. We soon struck a stone, and got it out by the aid of crow-bars, but not before the plow had struck two or three more. Some of these were large, and we had to dig round them; but they were all got out, and the plow again started, but had not gone two yards before it grazed another two or three inches below the surface. "It's a big un," said Conrad, "and won't do any harm." "We will have it out, nevertheless," I said, while the expression on the men's faces showed that they "guessed he'd soon get tired of this kind of work." And it did look a little discouraging. But I have not had five years' experience of a pretty rough kind of farm life for nothing. My faith in brain and muscle is strong, and I have never yet undertaken to do anything that *ought to be done* without finding, sooner or later, a way of doing it. It was so with these stones. After going round once, we went round again in the same furrow as deep as we could get in the plow. The wider and deeper the furrow, the easier is it to get out the stones. Good-sized stones, by taking a little pains, could be rolled out,—it being down hill,—with the plow. And this gave me a new idea. "Here's another," called out Conrad. "Wait a minute," I said, "try it with the plow." "It's too big," But the horses stirred it. "Try again, and I will help with the crow-bar." A good pull and out it came. Conrad laughed, shook his head, and said we should break the plow. It was a steel plow, with a steel point, and I knew from experience would stand pretty hard usage. We proceeded in this way, men and horses getting more confidence. There were two men besides Conrad and myself. I had a strong, narrow underdraining spade, and I soon found that it was far better than a crow-bar for getting out stones. It carries its own "bate" or fulcrum. With this spade Conrad and I could plow out stones weighing three, four, or five hundred pounds. When we struck one that was too much for us, we called for more help, and we found comparatively few that we could not get out at once with the plow, aided by the spade and a couple of crow-bars. We let the horses pull just as hard as if they had been hitched to a chain round the stone. It was not long before the men were unwilling to do much at a stone before seeing what the horses could do with it. We got out stones that it was all that four horses could do to draw away on a stone-boat. These, of course, gave us a little more trouble. We had to dig under them so as to get in a long lever. With this, and with the aid of the horses, crow-bars, etc., we succeeded in getting them out in less time, it seems to me, than we could have attached the hooks of a stump-puller to them. We got them all out without breaking a single thing. The main strain is on the point of the plow, and we found it necessary to watch the bolt, to see that the nut was screwed up tight. I question if there is any more danger of breaking the plow in this way than there is in striking a large stone when the horses are moving on at a fair rate in plowing. The one is a blow, and the

other merely a steady pull. I feel as much elated at getting the stones out of this hill as Tim Bunker did at knocking the bottom out of Jake Frink's horse-pond. Instead of an inch or two, we can now plow a foot deep, and it turns up like a garden. The soil round these limestone is always rich, and I expect to see some tall barley on this knoll next summer. As soon as I have earned another holiday we will go at the next knoll, and pile up the stones so as to draw them away in the winter.

One of the best breeders of Short-horns in England is a lady—Lady Pigot of Branches Park, Newmarket. She has just issued a catalogue of her herd, and prefaces it with some very sprightly and sensible remarks. She says: "I know that some breeders have laughed at my making such a point of the milking properties of a cow, but I am certain that we shall eventually have to consider this as the next step in which we must improve our cattle." There can be little doubt on this point. We want cows that are good at the pail, and that will fatten rapidly when dry. The two qualities are not inconsistent. We often have Short-horns that will fatten easily, but will give little milk, but do we ever have a well-bred Short-horn capable of giving large quantities of rich milk, yet which will not fatten rapidly when dry? And if so, why? Will not the steers from such a cow fatten just as well as from one that is a poor milker? A good milker must have a mild eye, a quiet disposition, good constitution, splendid digestion, and be a large eater. The latter is absolutely essential. I have never yet seen or heard of a great milker that was not a great eater. It must be so. She cannot make rich milk out of air and water. As well expect a mill to turn out large quantities of flour without supplying it with grain. And the same is true of a fattening animal. The qualities named are just as essential for a fattening steer as for a milch cow. Lady P. says: "That a propensity to milk well is traceable through a whole family no one can doubt who has been at the trouble of noticing, even in one limited herd, what differences there are as to one tribe being always good for the pail, the other just the reverse; and when we see farmers prefer the great, coarse, half-bred bull for his herd of dairy cows, rather than give a trifle more for a smaller, but purer bred beast, can we wonder at the scores of slow-growing mongrels that frequent our fairs and markets! But to go a step further—do farmers, as a rule, ask what sort of a milker the dam, grand dam, etc., was of the bull they are about to buy? Seldom, if ever. At the auction of the late Mr. J. Cloun's herd, last year, two miles distant, a friend of mine heard a farmer say, when a non-pedigreed cow was brought into the ring, 'Ah, them's the sort, none o' yer high-fashioned stock for me; I likes 'em with constitutions, and black noses, and crumpled-up horns,' and he actually bid for and got the ugly thing, though the pedigree cow, just before sold, was a neat, compact little cow and a great milker, and both went within a pound one of the other! So much for the ordinary farmer's sagacity! But we have men of great intelligence and powers of appreciation, though certainly, in my humble judgment, not many of them are to be found in Suffolk." That is good for a lady.

Here is another specimen of her style of writing: "Victoria Regia is a marvellous breeder; 500 guineas was given for her dam, Victoria, in 1800, and when Ward brought home my new, unseen purchase, he gravely shook his head. 'She's just a neat little cow, but—500 guineas

and the journey money—well, well! to be sure her ladyship knows best! Ward evidently begrudged the money. Victoria bred V. Regia, V. Rubra, and Prince Victor, and died of inflammation of the lungs a week after the latter's birth. V. Rubra also died; and the non-lovers of Short-horns were delighted! How they twitted me with their remarks as to the "risk," "unprofitableness," and "absurdity" of giving such "wicked prices." Their condolences savored more of sarcasm than sympathy, but I went on my way. And I now affirm that Victoria was the cheapest purchase I ever made."

—Lady Pigot has sold of the produce of this remarkable cow about \$14,000 worth of stock.

I never have believed that ordinary farmers with limited capital and with nospecial aptitude or taste for the business should undertake to raise thoroughbred animals. This is the work of the professional breeder. But there can be no doubt of one thing,—every farmer should make it a rule never to use anything but thoroughbred, pedigreed males. No matter how good a grade animal may be, he has not half the force to impress his qualities on his offspring that is possessed by the thoroughbred. How few farmers seem to understand this matter!

If I was going to seed down a piece of new land for permanent grass—that is, land which had never been cropped, I would be very careful not to crop it. If rough and weedy, instead of planting it to corn, summer-fallow it. You have then a good opportunity to level and clear it. Plow it up the fall previous, the earlier the better, in order that the old sod and rubbish may have time to rot. If the land is liable to be overflowed, or there is not fall for anything except surface drainage, be careful to make numerous deep furrows, and in such a way that the water will pass off quickly in the spring. When dry enough in the spring, plow again, if the sod is sufficiently rotted. If not, cultivate or harrow the surface, and keep down every sign of vegetation. In such circumstances the sod will rot very fast, especially in warm weather. Then plow again, and in such a manner as to level the land as much as possible. Use a dirt scraper, if necessary, to fill up the hollows caused by trees that were blown down. As a general rule, this will not be necessary. Make the land loose and mellow, and a good cultivator passed over the billocks two or three times in different directions will level them and fill up the hollows. Keep working the land until the middle of August, and then seed it down with a peck to half a bushel of Timothy seed per acre, and as many other varieties of good grass seed as you can get—and the next July will bring you a grand crop of Timothy hay, and the aftermath will afford such rich pasturage that the cows will make more butter and cheese than they did in June on the best of ordinary pastures. We can afford to summer-fallow for grass as well as we can for wheat. Why not? A crop of good grass-pays better than two crops of poor wheat. There is nothing more important in agriculture than rich grass. I do not mean simply a large crop of grass, but grass of the highest quality. If we could get as much nutriment in one ton of grass as we usually do in two tons, the one ton would be worth three tons. I fear I do not make myself understood. Supposing a cow eats 100 lbs. of grass a day, and makes 1 lb. of butter, we may assume that 75 lbs. of the grass is used to sustain the vital functions, and 25 lbs. to make butter. Let the cow eat and digest 125 lbs. of grass, and we should get 1½ lb. of butter a day. If she could

eat and digest 150 lbs. we should get 2½ lbs. of butter a day. But this cannot be done. The stomach will not hold it, and the only way we accomplish the object is by supplying a little concentrated, highly nutritive food, such as corn or pea meal. The grass will furnish a given amount of nutriment at a much cheaper rate than it can be attained in grain. And the reason we can afford to feed grain to cows is simply because we can thus get them to eat 25 per cent more food, and thus get 100 per cent more butter—or if 50 per cent more food, 300 per cent more butter. And it follows from these figures (which, of course, are hypothetical,) that if we could make our grass 25 per cent richer we should make it twice as valuable, or if 50 per cent better, three times as valuable. In other words, one ton would be worth as much as three, while in point of fact it only contains as much nutriment as a ton and a half.

Now, I do not say that summer-fallowing an old pasture that has never been cropped will do this, but it will certainly produce richer grass than if the land was planted to corn and afterwards sown down with oats. These grain crops rob the land of the very things that we need to make rich grass.

Farmers are making a great mistake in slaughtering their sheep. But nothing will stop them. It is a pity we cannot have more stability and fixedness of purpose in our agriculture. What we do we should do well—and stick to it. A farmer should think for himself, and not be influenced too much by outside opinion. "You cannot make anything by raising common crops," said a friend a year ago; "you should set out a hop-yard." What would he say now? There has been more money lost in hops the last year than would richly endow an agricultural college. And if people were educated to think they would have foreseen such a result. The fact is that common crops pay better now than anything else, provided you can only raise enough of them per acre. Stick to what you understand, and let those who have a fancy for novelties try them. There are enough farmers, so called, who wish to make money easily and rapidly, without you and me adding to the number.

I do not mean that one should always follow in the beaten track; we should make constant efforts to improve our processes. I think I hit on a good idea in summer-fallowing for spring barley. As yet I have plowed the field but once, but I have been through it twice with the cultivator, and it is now in splendid condition. The sod is nearly all rotted. Before winter sets in I shall plow deep, and then merely cultivate before sowing barley in the spring. I use four horses abreast on the cultivator, and put it in as deep as the land was plowed, and in some places it goes in a little deeper. A man can drive four horses as easily as two, and there is no trouble in attaching them to the cultivator.



EVENER, ETC., FOR TWO PAIRS OF HORSES.

All that you want is an evener and a couple of extra clevises. We made an evener out of a two-inch plank, eight feet long, ten inches wide in the centre, and tapering to six inches at the end. It is one of the most useful things on the farm. Why strain a span of horses in drawing a stone, with another team standing near, doing nothing, when a simple thing of this kind would enable us to put on the four horses and draw the load

with ease? There is no extra rigging required.

I have cultivated the corn stubble twice this fall, and shall go over it again if the weather is dry enough. A two-horse cultivator on a large farm is an absurdity. It does not go deep enough, or wide enough, or if it does it is "a regular horse killer." Put on four horses, and it becomes an exceedingly effective implement.

I sold my hogs the first of October for 10 cents per lb., live weight, the drover wanting them, he said, to "top off" a car load. And yet these pigs have had nothing but the run of the yard last winter, with a little corn meal for a week or two in spring, until the clover got fairly started. Since then they have had nothing but clover, and a little sour milk and wash from the house. It would, of course, have paid well to have given them a little meal with the wash, but I was short of corn, and expected low prices for pigs this fall. On the whole, however, they did well on the grass. They had plenty of it. They were grade Essex, and of course had splendid appetites. A hog that will not eat well is not worth keeping. They are light-boned pigs, with little offal, and never squeal, and nearly all they eat, over and above what is needed to sustain the vital functions, goes to make good, solid pork—and they will eat a good deal. If a farmer will but use thoroughbred males, I do not care which particular breed he selects, so that it is one which has been what Darwin calls "ennobled." He must be pure, without alloy for several generations. Then cross this refined, high-bred, "noble," and, if you will, somewhat delicate animal, on a large, coarse, vigorous, common sow, that has never been starved, on the one hand, nor pampered, on the other, and you will get little pigs that are "perfect beauties," and which will grow rapidly and fatten at any age desired. Such cross-bred pigs will outgrow the thoroughbreds. But of course that is the end of them. The extensive diffusion of the Chester Co. pigs during the past dozen years has made it not difficult to find the right kind of sows for the purpose of crossing with any of the established breeds—such as the Suffolk, Berkshire, Essex, or Yorkshire.

We may argue as much as we please against the use of pork, it will continue to be the favorite animal food with all persons who perform much hard, out-door work, especially in our cold winters. One pound of fat is equivalent, as a heat producer, to two and a half lbs. of starch or sugar, and so far as this is the object of eating animal food, good, firm pork is the cheapest meat that we can use. But a farmer who uses his brain as well as his muscle needs something more than fat pork. For what sin is he who raises it denied the use of beef, or mutton, or poultry? In the summer, without an ice house, it is difficult to keep fresh meat. Not so in the winter. "But I can't afford it." Nonsense. But if it were true, it would only prove that you do not work as hard or as intelligently as a farmer should. If you spend two or three hours of these short days talking at the corners, it is perhaps true that you cannot afford to eat beef. You do not deserve salt pork. Two hours' work will pay for a good beefsteak, and that, properly cooked, will enable you to work harder, and to think as well as work,—and it is thoughtful work that sells. At any rate a farmer can have mutton when a pretty good sheep can be bought for \$1.75, and the pelt worth more than half the money. When thousands of sheep are boiled down for the tallow, and the rest fed to swine, the farmer who

sells them might, one would think, afford to eat a little mutton occasionally, and the children, instead of rye coffee, might have a basin of soup for breakfast that would send them on the run to school these zero mornings puffing and blowing off steam like a locomotive. The *Agriculturist* some time since published a good recipe for making mutton soup. You kill the sheep, and cut it up for her, and I will guarantee that your wife, if she follows the recipe, will make a soup that the most inveterate hater of mutton cannot help but pronounce excellent. It is, in fact, exceedingly palatable, exceedingly nutritious, and exceedingly cheap. Such a soup would go far to supply the need which leads to a desire for malt liquors and other stimulants. Our temperance friends should take the hint. Good cooks may do much to arrest this sad habit of drinking. I think it was Henry Ward Beecher who said that "one loaf of bread to a poor, famishing family, would do them more good than two sermons."

About Stone-Boats.

On a stony farm a stone-boat is almost as much of a necessity as a plow, and the description of how to make a good one will have little

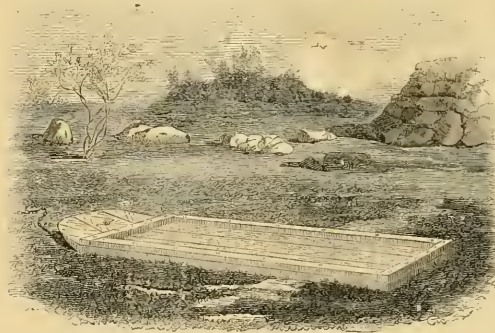


Fig. 1.—STONE-BOAT.

of novelty to many of the readers of the *Agriculturist*. A stone-boat, or "stone-drag," as it is frequently called, must be of hard, durable wood, as it cannot be protected by paint, nor shod with iron. The paint would soon be worn and bruised off, and the iron would make too much friction in dragging over stones and earth. White oak is probably the best wood. Three 10-inch or two 15-inch planks, $2\frac{1}{2}$ inches thick, should be got out, for one boat. It is best to select one or two large logs with natural bends in them, so that they can be sawed without waste, and have them sawed about 6 feet straight and one foot at a slight angle—the bend being about 3 inches in the foot. The planks are laid together and connected by means of oak raves. The front and rear raves which cross the planks may be considerably wider than the side raves, if 5 or 6 inches wide and 2 inches thick, they will be strong enough. The side



Fig. 2.

raves should be about 3 inches in width. These are pinned on with oak pegs or trenails (trunnels), which are driven two in each plank, at the ends, and slanting slightly different ways so as to "tie" or "draw," and the more the planks are wrenched, if well "tied," the snug-

ger will the pins draw. The rave in some cases is carried across the front end or "bow" of the boat, but the arrangement shown in the engraving is much better. Fig. 2 shows the way in which the chain may be attached, passing through a hole made obliquely in the center plank. A modification of this boat, which may be very convenient under some circumstances, has both ends like the front end of the one shown in fig. 1. This end may be left square, as the planks are sawed, but the rounding and chamfering of the edges is an improvement.

Male Breeding-Animals.

The good of every individual, man, woman, and child, in the State would be as directly affected by an improvement in our breeding stock as in any other increase in our productive industries or great internal improvement. It is the business of the State to foster industries, and to carry out or promote improvements. Now, there is not a State in the Union in which there are not five, if we may not say ten, poor bulls, stallions, boars, and rams, to one tolerably good one. If in a dairy region only thoroughbred bulls were used, farmers would soon get in the way of using only those of good dairy breeds, and

we venture to say that the yield of milk would be increased on an average 2 quarts per day during the milking season. With 50 cows this would make 24,000 quarts, worth, at 3 cents per quart, \$720, which is clear gain to the farmer, and so much more taxable property in the community. It becomes a question of no little importance for Agricultural Societies, Boards of Agriculture, and the legislators of the various States to discuss, if by encouragement or taxation they may not be able to effect some such change.

Suppose, for instance, that a State should tax all bulls twenty dollars a head, and allow the officers of the State Board of Agriculture to remit the tax on all which came up to a certain standard of excellence. How long would it be before an essential change would be observed in the whole character of our neat stock and dairy products? It is certainly a question of great interest, how the State may best secure the advantage to accrue both to its treasury and to its citizens by the general use of well-bred or thoroughbred male animals as sires.

How a Fowl May Live without a Head.

A "Headless Rooster" has been exhibited in New York and other cities, with a great flourish of show-bills, in which the bird is advertised as a phenomenon "defying explanation by any known laws of nature." One of our associates examined the bird as far as the surliness of the proprietor would allow him to do so, and made up the subjoined account of the matter as it appeared to him. The article has been in type several months, it having been crowded aside by other matter. The "Headless Rooster" man has recently been arrested under the law to prevent cruelty to animals, and the complaint shows that the operation was precisely of the character described below. The complaint also sets forth that the prisoner

was in "the constant habit of performing said practice on roosters, which he sells for public exhibitions, and that said roosters, after having said operation performed, live in pain and torture for periods from between one week and two months, when the same languish and die."

In fig. 1 the bird is represented as he stands on exhibition. His attitude is that of perfect unconsciousness. He stands in a semi-couched position, with his plumage slightly raised, which gives him a plumpness and roundness unnatural in health. He will stand in this position for hours unless disturbed, and when aroused will simply move a step or two, and again settle down as if nothing had happened, apparently forgetting that he had been disturbed. The sense of hearing has not been lost, and at the



Fig. 1.—HEADLESS FOWL.

report of a pistol shot he will start up, move his neck around, and almost instantly settle again into the same listless, senseless state. He will swallow food when placed in his throat by his attendant, and life is maintained in this way.

To show how a bird may live with a portion of its brain removed, we must explain the structure of that organ. The brain, instead of being one mass of solid, nervous matter, as is commonly supposed, is really composed of several collections, separated more or less by bony partitions. Figure 2 represents the head of a rooster cut longitudinally in such a way as to show the brain in its place, and the internal bony structure of the skull. The diagram, fig. 3, will show the divisions more plainly. The olfactory center, figures 2 and 3, a, placed in front, sends its nerves to the internal nose and governs the sense of smell. The cerebrum, b, or what is commonly considered the brain proper,

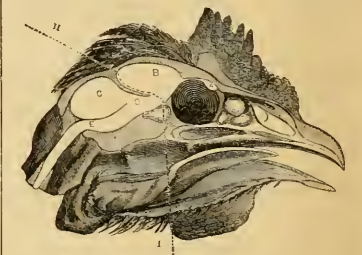


Fig. 2.—SECTION OF HEAD.

is the seat of intelligence and reason, and is the largest of all the divisions. The cerebellum, c, is situated behind all the other divisions of the brain, and is next in size in most animals to the cerebrum. This is said to preside over what is called associate action, that is, that peculiar coöperation of action in the muscles which

enables the animal to perform all ordinary movements of the body, such as standing erect, walking, etc. In front of the cerebrum and in the natural position of things partly covered by it, are the *optic-tubercles*, *d*, or the centers governing the sense of sight, and in far-seeing animals, such as birds, they are comparatively large.

Lastly, at the top of the spinal cord, and at the very base of the skull, we have the *medulla-oblongata*, *e*, which



Fig. 3.

governs the function of breathing, the digestion of food, and all muscular power. All the nerves coming from the muscles of the body and forming the spinal cord have to pass through this portion before reaching the other parts of the brain. The slightest injury to this part oftentimes results in instant death, so that it has received the name of the "vital-point," or the "vital-knot." Experiments have shown that all the other parts of the brain except this last, the medulla-oblongata, may be injured or even removed, without the immediate destruction of life, but as soon as this is disturbed, breathing at once stops, the heart's action soon ceases, and death is the result. The injury the rooster on exhibition has sustained seems to be this. The head, or rather the face, has been so taken off as to leave behind, uninjured, the three last named parts of the brain, *c*, *d*, *e*, which are the ones really essential to the maintenance of life. If a bird's head be cut in the direction indicated by the dotted line, *h*, *i*, fig. 2, it will only have lost its face and the external appendages thereto, and the intellectual part of the brain, the cerebrum, leaving behind the parts essential to the life of the animal. Though apparently headless, there is still enough of the brain left to allow the animal to perform certain functions, for a while at least.

Clearing Woodland.

In adapting woodland to ornamental purposes, and in some other cases, it becomes necessary to remove the whole, or a part of the trees. In doing this, it is often better to remove the trees with the main roots, rather than to fell them in the usual manner and take the stumps out afterwards. The leverage is very great in a tall tree, and the stoutest one can be turned out with a yoke of cattle. The best tool for cutting the large roots of trees is the common mattock or grub-axe. It has a long, thin blade, with a much narrower cutting edge than the common axe, which is of great advantage in cutting roots imbedded in the earth. With this, one gives a more powerful blow, and it is less liable to get dulled. After the roots are cut, a rope may be attached to the tree and hitched directly to the yoke, if the tree is small, or passed through a pulley fastened to the ground. The higher up the tree the rope is fastened, the greater is the purchase upon the roots. After cutting up, the trees, roots and all, can be drawn into heaps, and burned. Where the wood is so near market as to be valuable for timber, there is an additional motive for this mode of extracting roots, in the fact that with the hole they can be made into ship knees. Large quantities of larch and spruce knees of this kind are brought from the forests of Maine, and sold at good prices to our ship builders. Material for ship building is constantly appreciating in value, and knees are now

sent hundreds of miles to market by water and by rail. The knees, if well sold, would often pay a good part of the expense of grubbing the trees. If the trees are already cut in the ordinary way, with the stump standing, nothing remains but to apply some kind of a stump puller.

Hickory Nuts and Timber.

The Shagbark Hickory is a favorite tree with us and with every northern farmer, so far as we know. It is very handsome, and of rather quick growth; the foliage is beautiful in its rich, glowing greenness, and little subject to injury from insects, though, with all the rest of our forest trees, the hickory is attacked by several. The



Fig. 1.—HICKORY NUTS.

tree is perfectly hardy, requiring a good soil, enjoying moist grounds, yet doing well wherever its roots can penetrate to a permanent water supply, or into deep loamy or rocky soils, which are always somewhat moist. The fruit is the most delicious of our native nuts, in the estimation of most people, and the mere mention of the wood recalls grateful memories of hearthstones, where the genial blaze of the hickory logs in the great fire-place was as much a part of the winter evening welcome as the cordial hand-grasp. The belief is a common one, that the days of open wood fires are numbered, and that the bright, warm, hickory blaze must give place to red-hot anthracite and black stoves. We do not entertain such an opinion. With only a little painstaking we can have hickories enough, which will pay an interest on the ground they occupy with fruit and shade and beauty, and at last give us fuel for our open fires, handles for hammers and axes, flails, ox bows, hoop poles, spokes for wheels, teeth for rakes, and tough, elastic wood for purposes wherever these qualities are desirable.

There is almost as much difference between the nuts of Shagbark hickories as there is between apples. This is not alone in size, but in quality—in sweetness, and in the nature and thinness of the shells. The character of the shell is very important. We all know that some nuts crack so that the halves of the irregular kernel drop out almost or quite whole, or are picked out without difficulty. This quality is peculiar to nuts of certain trees, and is not altogether dependent upon the thinness of the shells, or the way they are cracked. The good qualities seem to be in some degree associated with the thickness and size of the outer husk, which in the fruit of the Shagbark Hickory (*Carya alba*) falls apart, when ripe, in four segments, leaving the nut free. The thicker the

husk, the better the nut usually. Some thin-husked nuts are very sweet, but the shells are hard, and the nuts usually small. Hickory trees are easily raised from seed; we think as easily as peach trees. The little trees should be transplanted in the nursery rows at a year old, the tap-roots being cut off, and after this they will bear transplanting like other nursery stock. Seeds selected from trees bearing remarkably fine nuts will be very likely to produce fine fruit, provided the parent trees stand isolated from inferior sorts. Cultivation and enrichment of the soil have a marked effect on the size and abundance of the nuts.

We have never known of the hickory being successfully grafted or budded. It is possible, however, to multiply choice trees from the roots.

Mr. A. S. Fuller assures us he has been entirely successful in obtaining young trees by bending up the upper roots, so as to bring a portion to the surface, and wounding this, which causes the formation of shoots upon it. These shoots may be cut off from the parent tree, and as soon as established as independent plants, transplanted. We give an engraving of the fruit of the Shagbark Hickory, fig. 1, and in fig. 2, two nuts, one, the smaller, being the nut of this tree, of exact natural size, and somewhat above the average of good hickory nuts. The larger figure is the nut of the Thick Shellbark Hickory of the West. It is a decidedly larger and coarser nut, of a yellowish-brown color; the shell is exceedingly thick, but the nuts in some varieties approach very near in excellence to that of the thinner shelled Shagbark. The trees are similar, both in appearance and quality of the wood. The leaves of the thick Shellbark Hickory (*Carya sulcata*) have, however, more frequently 7 or 8 leaflets than 5, which is the common number upon the Shagbark. Much more attention should be given not only to the preservation of the trees already existing, but to the propagation of the hickory, chestnut, and other trees, valuable for both fruit and timber. We believe it is in the power of



Fig. 2.—SHAGBARK.

THICK SHELLBARK.

almost every farmer to have a grove of hickories yielding fruit much superior to the common hickory nuts of the woods, or of the market, and bringing, also, a very much higher price.

Leaves for Bedding.

Gardeners who have occasion to make hot-beds generally appreciate the value of leaves, and gather them if they are available. Farmers, as a rule, with every facility for gathering them, and forests close by, leave them to rot upon the ground. They are not, indeed, quite lost there, but soil that has had hundreds of crops of leaves upon it and is a mass of leaf mold several inches

es deep, will not be immediately benefited by the crop of leaves. Leaves, if gathered, used for bedding, and composted with the manure, will bring valuable returns the next harvest, and show their influence in subsequent crops. We recently visited a farmer who classes forest leaves as one of the best fertilizers afforded by his farm. He gathers large quantities in the fall and early winter, stores them upon the

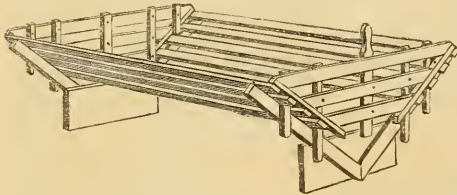


Fig. 1.—WAGON OR CART RACK FOR LEAVES.

floor above his stables and sties, and through a chute drops them upon the stable floors as they are wanted. Leaves make clean, warm bedding for all his animals, and add to the bulk and value of his compost heap. They furnish remunerative work to his men when the harvests are gathered, and thus are an advantage to laborers. They make good bedding, and thus allow him to sell straw. This is an important item where straw is worth \$15 a ton and upwards. Leaves are somewhat difficult to handle, but if gathered in heaps a week or two before carting they become quite compact, and, with a large basket and rake, are readily loaded upon the cart. A rack, with flaring boards extending about two feet beyond the sides and ends of the cart body, is a very convenient article for carting the leaves. We give an engraving, figure



Fig. 2.—SLED RACK.

1, of a rack in use upon the farm of Reisig & Hexamer, of New Castle, N. Y. The two end boards upon which the rack is built just fit into the wagon box. The rack is made entirely of 4-inch strips of 1½-inch pine, fastened together by cheap iron bolts with nuts, and has a spread of nearly 7 feet. The leaves are loaded and unloaded with dung-forks, and, of course, trodden down as they are thrown into the wagon.

Where the way from the woods to the barnyard lies over grass fields and lanes on which there is but little bare ground and few stones, a rack, or hopper-shaped rack, such as is shown in fig. 2, made to fit a wood-shod sled, will be found very handy, on account of its being so low and easy to load. It is fastened on by low stakes in the place of the ordinary sled stakes.

Rotations for New England and the East.

One great desideratum of Eastern farming is a good system of rotation. It is not desirable to have all farmers adopt any one system, for there are circumstances in the condition of every farmer, which make some one or two crops profitable for him, which would not pay in another district. There are certain characteristics common to New England, New York, and parts of New Jersey and Pennsylvania, which make a rotation desirable for them, which would not be at the West or South. They are dairy regions naturally, and the grasses reach a high degree of excellence there. Hay, under the

system which now prevails, pays as well as any other farm crop. These regions are quite thickly settled, and there is a large city and town population to be supported, making excellent home markets. In such localities the demands of these home markets will very naturally determine the character of the husbandry. We suggest a few rotations which will work well in the districts indicated. No. I, 1st year, corn on sod, heavily manured; 2d, potatoes; 3d, oats, seeding with clover and Timothy; 4th, clover; 5th, 6th, and 7th, Timothy and other grasses in meadow. This is the old-style rotation in New England, but never very rigidly followed. The land frequently lay in meadow six or eight years, long after it ceased to yield remunerative crops. The clover, too, was frequently omitted. No. II, 1st

year, corn on sod heavily manured; 2d, same; 3d, potatoes; 4th, barley; 5th, clover; 6th, 7th, and 8th, Timothy and other grasses. This extra year of corn is employed in lands full of weeds, and the extra manure given the land would probably make another year or two of grass profitable. Land should not be kept in grass where the yield of hay gets essentially below two tons to the acre. It should either be plowed or top-dressed immediately. No. III, 1st year, potatoes on sod, with ashes, plaster, or lime in the hill; 2d, corn heavily manured; 3d, rye; 4th, clover; 5th, 6th, 7th, grass. Where potatoes are put upon sod, the land should be plowed the previous September, so as to give time for the sod to rot. In the spring it should be cross-plowed, to make the seed-bed as mellow as possible. A good, rich sod usually gives a large yield of potatoes without disease. No. IV, 1st year, corn upon sod heavily manured; 2d, oats or barley; 3d, clover; 4th, early potatoes; 5th, winter wheat or rye; 6th, clover; 7th and 8th, grass. In this rotation there are two years of clover, which is desirable for light soils, or for farms a good deal run down. No. V, 1st year, early potatoes on sod; 2d, winter wheat or rye, with manure; 3d, clover; 4th, ruta-bagas; 5th, clover; 6th, 7th, and 8th, grass. Near seaports where there are good facilities for marketing, ruta-bagas are a very profitable crop. The turnip should always have manure, and the concentrated fertilizers applied in the drill have very marked effect. Grass is prominent in all these rotations, for butter making is profitable in all this region, and other animal products of which grass is the basis are high. Clover is always present, for it is the best restorer of the soil from its own resources with which we are acquainted. Potatoes, when they do not rot, pay better than most crops, and we think it quite possible to avoid the rot by selecting new varieties and avoiding fresh manures. Corn pays moderately on a dairy farm if the stover is properly cured, notwithstanding the competition of the West and South. No. VI, a good, heavy soil rotation is as follows: 1st, corn on sod manured; 2d, potatoes with ashes and plaster, or some concentrated fertilizer in the hill; 3d, oats or barley, without manure, seeding with clover, plastered after harvest; 4th, clover plowed under in July after mowing or feeding off in June; 5th, winter wheat with guano, seeding with grass, and clover in the spring; 6th, clover; 7th and 8th, grass. If the soil be weedy, three hoed crops in succession would probably pay, thus: No. VII, corn and potatoes as in No. VI, then, 3d year, on light land, white beans; on heavy land subsoiled, roots (mangels,

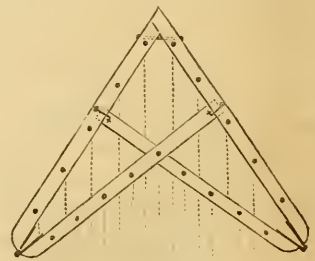
or ruta-bagas,) with fine manure and thorough tillage; 4th year, spring grain, followed by, 5th, clover; 6th and 7th, grass; or 5th, clover and wheat sown on the limed sod; 6th, wheat, top-dressed; 7th, clover; 8th and 9th, grass. If potatoes are well cultivated and kept clean, and especially if the land be pretty free from weeds, they may be put on two years running, thus: No. VIII, 1st, potatoes on sod; 2d, potatoes with fine lime, muck, and bone-ust compost; 3d, white beans; 4th, rye; 5th, clover; 6th and 7th, grass. This rotation is especially adapted to a rather thin, gravelly soil, not retentive of manure. We offer these rotations to stimulate the thoughts of our readers, and to lead them to devise the system adapted to their peculiar wants.

Potatoes on Clover Sod.

We tried potatoes on a clover sod for the first time this year, and like the results. The land was a heavy, gravelly loam, in good heart, and the clover was turned under the last of April, after it was well started. The piece was immediately planted with the Early Goodrich and Cuzco potatoes, in drills. The crop was hoed twice, as well as the long-continued rains of summer would permit. We anticipated rot, on account of the excessive moisture, but a large crop of sound potatoes was harvested in September. The quality of the Early Goodrich is excellent, and even the Cuzco is a fair table potato. Clover furnishes a large amount of vegetable matter to the soil, keeps it loose and mellow, and is probably quite as good a preparation for potatoes as for wheat. As clover is usually followed by Timothy kept in meadow for several years, this experiment is not often tried. If it will give us a large crop of sound potatoes it will be worthy of general adoption.

A Good Wooden-toothed Harrow.

Wooden harrows are convenient articles on most farms, but almost indispensable on those with light sandy or gravelly soils. They are, so far as we are aware, always home-made, and are usually of the square or "A" forms. The teeth should be not less than an inch and a quarter in diameter, and eight inches long; if needed longer they must be larger. The beams must therefore be strong, or the holes will weaken them. Mr. Sidney Penny, of Suffolk Co., L. I., has had in use for many years a form of



WOODEN-TOOTHED HARROW.

wooden-toothed harrow which he highly commends, and which strikes us as useful, because the teeth are arranged so that the ground is all harrowed twice, which is a better operation than if the same number of teeth passed at once through the soil—that is, in a single rank, as in the common "A" harrow. This makes fewer holes through the outer beams, also, and these

beams, which are subjected to severe strains, are braced at three points instead of two. Besides these advantages, the main beam and brace-beam on each side are hinged together with a pair of strong door hinges. When the harrow is not in use, the hooks which hold the brace-beams in the mortises being undone, and the center tooth and the bolt at the front end removed, the harrow comes in two parts; the beams of each side fold together, and it is laid away, taking up but little space. Among the advantages of wooden-toothed harrows is the compression of the soil which they effect. While they tear up sods and break down the clods quite as effectually as iron-toothed ones, they do not tear out and uncover long manure so badly, and they settle and compact the soil a good deal like a roller or clod crusher. Their work is chiefly on the surface, and they cannot be settled deeply into the soil as can the others. This form cannot carry so many teeth as the square harrow, made with four parallel beams, but labor with it is more economically expended, as a general rule, for it is uniformly the case that, however accurately arranged, the teeth in actual use will follow more or less one in the track of another.

Tim Bunker on the Hay Tedder.

"What sort of a consarn is that, Squire?" asked Jake Frink, one hot day last July, as I drove my new tedder to the field.

"You just come down to the horse-pond lot and I'll show you," I replied. So Jake followed on, where we found at least a dozen of my neighbors standing round to see the last novelty in farming. The field had just been mowed, and though I say it that shouldn't, it was the stoutest grass in Hookertown, plump three ton to the acre of Timothy, just in bloom, upon a lot where water used to stand half the year, and nothing but rushes, hardhack, and sour grasses, ever made a crop. It is astonishing to see how underdraining improves land, and how much more good manure does upon a soil that has had the bottom knocked out of it. Jake Frink groans every time he goes by that horse-pond lot, to think that he sold it for twenty dollars an acre. It pays the interest on three hundred now easy. I had never tried the tedder on so heavy grass, and I felt considerable worried about the result. I started alongside the wall, and the grass flew up in a cloud behind the machine just as if a whirlwind had got hold of it.

"A sort of patent compound grasshopper, ain't it?" said Jake inquiringly, as he noticed the kicking motion of the forks.

"You can't say that's no great shakes," said Seth Twiggs emphatically, as he puffed away at his stump pipe.

"It's a shuky consarn any how," said Uncle Jotham Sparrowgrass, striking the ground with his cane a little harder than common. "It will never amount to any thing, see if it does. Job Miller had a thing a good deal like it thirty year ago, over on the Island. It was too hard on the horse and didn't pay."

"It leaves the grass very light and even," said Deacon Smith. "I shall have to get one." "It must dry very rapidly," Mr. Spooner remarked.

"That's so," responded George Washington Tucker; "but it means less work for poor folks, and harder times. Every new machine drives another nail in their coffins."

"Less work, you lazybones!" exclaimed Seth Twiggs. "It's hard telling how you could do any less and live."

"You may as well put up your stirring sticks and old rakes' tails. You want want 'em any more," said Benjamin Franklin Jones.

"It will cure the hay too quick," said Uncle Jotham. "The sun gets at it so on all sides that the grass will break like a pipe stem."

"The quicker hay is cured, the better," said Deacon Smith. "Two hours are better than two days, if you can get the water out of it."

Nothing has awakened so much interest as the tedder since the subsoil plow was introduced. The times have changed a good deal since then, and the presumption now is that a new tool is good for something, especially if it makes its appearance in my fields. So many of my jobs have turned out well, and so many of my neighbors have imitated my example, that public opinion is very much changed. I had heard and read a good deal about tedders, but never saw one work until this season. I had a good many doubts. The English tedder is a heavy affair, quite likely to get out of repair, and entirely unsuited to our Yankee ways. But the first time I saw one of our sort of tedders I made up my mind to have one. You see, Mr. Editor, it just supplies the last tool we wanted in hay-making. The mower, rake, fork, tedder, all going by horse-power, make haying as light and pleasant as any work upon the farm.

The tedder saves a good deal more work than I had thought for. To begin with, it does the work of at least ten men. You can stir two acres of heavy grass in an hour easy, and it is more thoroughly stirred than it is possible to do it by hand-power. It is sent up into the air with a sudden jerk, that shakes all the water out of it, and it falls back upon the ground so loose that the sunshine can reach every particle. This work is done in the hottest part of the day, and the drying goes on very rapidly. The tedder works so fast that you can go over your field three or four times, if it is necessary, and get heavy grass cured enough to go in the same day it is cut. This is a very great saving of labor. By the old method it frequently takes three days of tolerably good weather to cure heavy grass. The cocks have to be made and opened twice or three times before the hay can go into the barn. Now, with the tedder, we can have the hay all shaken out by eleven o'clock, if it is all mowed by that time, and by keeping it stirred up it is pretty well cured by three in the afternoon, especially if the grass is fitly fit to cut. It makes the mowing machine worth a good deal more to us than formerly, for now we can mow all we want to in a fair day, and have no fears but we can get it up. Sometimes we used to get so much down that a part of it would get injured before we could get it secured. One grand thing about the tedder is, that it cures the grass very uniformly. There are no wet, green locks in it, and even if it is not quite cured enough the first day, by leaving the cocks in the field covered with hay caps overnight, they will often be just right to go in the next day without opening. The quicker you can get hay nicely made and out of the sun, the better.

We have had the tedder up for discussion in the Hookertown Club, and it has passed muster, after a pretty severe overhauling. If we keep on inventing new tools, I expect we shall get the farms so that they will run themselves pretty soon. Yours to command,

TIMOTHY BUNKER, ESQ.,

Hookertown, Conn., Oct. 15, 1868.

WHEAT IN ENGLAND.—The Agricultural Gazette estimates the annual consumption of

wheat in the United Kingdom as 20,000,000 of quarters, it may be a million more, and states the average yield per acre, throughout the kingdom, at 27 bushels. An English quarter is 8 bushels.

The Potato Excitement.

When we read the accounts of the enormous prices paid for tulip bulbs in the 17th Century, we think that the stories must be much exaggerated or the people of that time must have been very foolish. The present excitement in regard to new potatoes in a measure rivals that of the tulips—at least we thought so when we were told that \$50 each had been refused for a couple of tubers that we were inspecting. The late Mr. Goodrich began his experiments with unimproved stock from South America, and the Early Rose and other new sorts are derived from Mr. G.'s seedlings. Whoever produces a better potato than we already have is a public benefactor, and if he gives us one which will produce more to the acre, he adds largely to the wealth of the country. It has thus far happened that those who have done most for the improvement of the potato have not been pecuniarily benefited. Mr. Goodrich, it is said, made no money, and we learn that the large sums derived from the sale of the Early Rose went to others than the originator of that variety. The success of the Early Rose has been so very general that new seedlings will doubtless abound, and it is not unlikely that many indifferent ones will be offered at enormous prices. It will be well for those who wish to experiment with new sorts to purchase only of dealers of established reputation. The remarkable specimens above referred to were raised by Mr. Breese, the originator of the Early Rose, but they will not be put upon the market this year. Another seedling by Mr. Gleason, of Mass., and by him esteemed of high quality, is the Willard, sent out by Mr. Gregory, of Marblehead. It is a neat-looking, long potato, of medium size; the skin is red and blotched somewhat like that of the Calico. Mr. Haffron, of Utica, has a seedling from the Early Rose, called the Climax. Those who have tested it speak in high terms of its quality upon the table. It is a white variety with a rough skin and depressed eyes, and has the hardy look that marks most of the Goodrich seedlings. With the new sorts already offered, with others to come, we may anticipate some interesting developments in potato culture.

A Fish-Oil and Gnano Factory.

In November of last year (1867) we gave an engraving and description of the Menhaden, or Moss-bunker, with an account of the process of manufacturing the fish into oil and fish-gnano. Since then one of our artists has visited one of the most extensive factories, located at Greenport, L. I., and made several spirited sketches, which are presented on the following page. In the article above alluded to will be found a full description of the fish and its products, and we need now only point out what the engravings illustrate. A correspondent at Greenport writes:

"The fish are obtained from fishermen, who either own their own 'rigs' or are part owners with the factorymen, and who receive a certain price per thousand. A rig consists of a yacht, very often a fast sailer and elegantly fitted up; two 'carryaways,' and two seine boats of about the size of an ordinary whale-boat; the gang is composed of eight or nine men, including the captain, who share equally in the profits

of the season's work. The net with which the fish are caught is peculiarly managed—it is about one hundred and ten fathoms in length, and provided with corks on one side and iron rings on

are thus brought near the surface, and loaded on board the "carryaways," to be taken to the factory's dock. At the factory the fish are measured either in cars or boxes, and are drawn

hydraulic press. The oil and the water absorbed by the fish in boiling are pressed out through the slats and carried by leaders to the tanks in the shed by the side of the factory, where the



Fig. 1.—VIEW OF THE FACTORY WITH A LOADED "CARRYAWAY" RETURNING.

the other. When a school of fish is discovered, the two seine boats, each bearing its portion of the seine, are started off noiselessly in opposite directions and rapidly surround the fish. As

upon the railway to the tanks, where they are thrown into water, and a full head of steam turned on into the bottom of the tank, which contains some sixteen to eighteen thousand fish.

oil man skims, boils, and otherwise prepares it for barreling. As soon as the pressure is taken off, the curb slowly resumes its position on the railway, and is pushed to where a man stands



Fig. 2.—DRAWING THE NET.

soon as this is accomplished, the boats having formed a circle and coming together, the ends of the seine are joined. The seine now encloses the fish, being kept in a vertical position by means

After thirty minutes' cooking, the water is drained off, and a man getting into the tank fills the curbs, which are circular, and formed of strong wooden slats, bound and lined with

ready to remove the cheese as it falls from the curb, upon the opening of its hinged bottom."

This cheese, or scrap cake, is ground to different degrees of fineness, to form the fish-

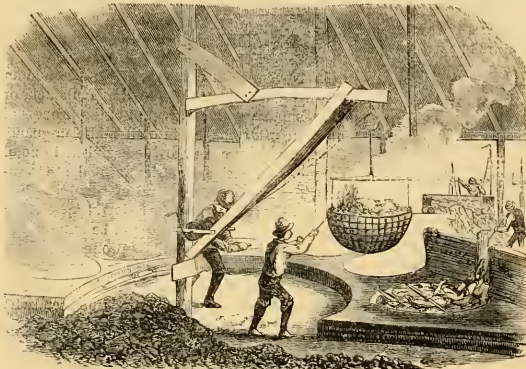


Fig. 3.—INTERIOR OF POT WORKS.

of the cork floats. Ropes pass through these rings and are attached to the "Tom," a heavy leaden weight, which is thrown overboard, and, by drawing the ropes, purses the net. The fish

heavy iron. These are rolled under a solid stationary head fitting closely the inside of the curb, and against which the fish are pressed, as the curb is slowly but powerfully raised by a

guano; this substance, being rich in ammonia-producing material, is used by some manufacturers of fertilizers to supply ammonia to phosphates that are deficient in that constituent.

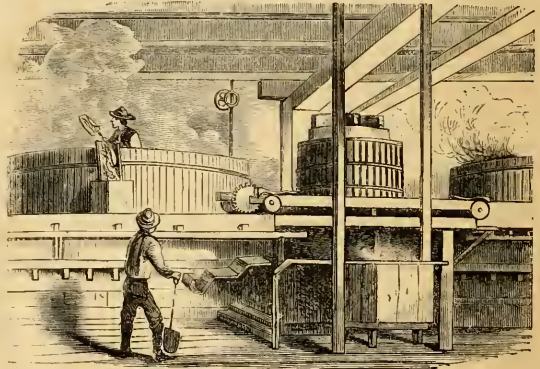


Fig. 4.—THE PRESS ROOM.

Hardy Apples.—Duchess of Oldenburgh.

After many costly lessons our fruit growers have learned to consider the qualities of the tree as well as those of the fruit. The question is not what is the best fruit, but what is the best we can raise in our climate. With quickly fruiting things, like grapes, the question is soon settled, but it takes years of patient waiting before we can find out if certain varieties of apples are suited to a particular locality. He who

North and North-west to have a list of hardy apples, and we are glad to see that the Indiana Horticultural Society offers premiums for the varieties best suited to northern localities.

The Pratt Pear.

It is worthy of note that our most valued native fruits are chance seedlings.

The Pratt Pear is one of these, and it is also one that deserves to be better known. The writer has seen this pear brought to the Providence market in a farm wagon with no more care than is given to potatoes. People bought the fruit by the peck and thought it excellent to bake, but never supposed that they had one of the choice pears of the country. Some 20 years ago the R. I. Horticultural Society was formed, and it was soon found that the little State was rich in choice fruits. The Pratt Pear, among others, became known to

William Ried said: "I think it will prove one of the best pears we have in New Jersey." Col. Wilder followed with the remark: "If the Pratt was more generally known, it would come into great favor. It must stand in the Catalogue as one of our best." After commendations from such eminent pomologists we need not add a word in praise of the Pratt.



DUCHESS OF OLDENBURGH.

shows that an apple fails, deserves as much credit as he who reports the success of one, as success and failure are due to inherent qualities over which the cultivator has no control. Among the apples which have proved hardy in the North-west, as well as in Northern New England, is the Duchess of Oldenburgh. It has not only hardness of tree but great beauty of fruit to commend it. In a market fruit a showy exterior is of more value than delicacy of flesh and flavor. At the late Ohio State Fair, A. B. Strother, of Hancock Co., O., exhibited a dish of these apples, so strikingly beautiful that we obtained one for illustration. It sometimes does more good to call attention to an old but not generally known fruit than it does to bring out a new one. We regret our inability to give the brilliant colors and the fine bloom. For a description we cannot do better than quote that in American Pomology, by Dr. Warder, who says: "This very beautiful striped apple is from Russia, and has proved one of the hardiest apples in our trying climate. Reports from the North-west are entirely satisfactory as to its hardness. Tree medium size, round-headed, sufficiently vigorous and perfectly hardy; fruit medium, regular, roundish-oblate; surface smooth, waxen-yellow, partially covered with distinct and regular stripes and splashes of brilliant red and carmine, often having a light bloom, such as is found on most Russian apples; basin regular, pretty wide; eye large and closed; cavity regular, acute; stem medium to long, rather slender; flesh white, tender, juicy; sour and suitable for cooking. Though attractive to the eye, it is unsuited for the dessert. By Dr. Jno. A. Kennicott, the pioneer cultivator of Northern Illinois, this apple was considered the *ne plus ultra* for that and higher latitudes."

It is a matter of great importance to the

pomologists through the labors of the above-named Society, and took its place among our best varieties. It seemed like meeting an old friend to find this pear in the experimental garden at Washington, and in the specimen grounds of Ellwanger & Barry, at Rochester. From the last-named collection we took a specimen for our illustration, which we give with the remark that the fruit grows there less pyriform, i. e., shorter, than it does in Rhode Island. The tree is an upright grower, very vigorous, though rather late in coming into bearing. It does not



DUCHESS OF OLDENBURGH—SECTION.

grow well upon quince. The skin of the fruit is greenish-yellow, very thickly dotted with russet, and sometimes shaded with crimson. The flesh is white, remarkably juicy and melting, and with a highly vinous flavor. It is a variable pear and requires careful ripening to develop its best qualities. At the meeting of the American Pomological Society in 1863, the late



PRATT PEAR.

More Quinces Wanted by Planters.

The show of Quinces at the Ohio State Fair was splendid; yet the fruit is not plenty, bringing four dollars a bushel in Ohio, while at the East it is too precious to sell by measure, but is sold by the hundred. Thinking that people were not awake to the value of the Quince, we requested a distinguished pomologist to write up the subject. He replied that the trouble was not with the people, but with the nurserymen; the demand was far in advance of the supply, and so thoroughly was the stock of quince trees in the nurseries reduced that he knew a case in which Angers quince stocks upon which pear buds had failed were used to fill orders for quince trees. Now it does but little good for us to advocate the planting of anything of which a supply cannot be obtained. If the nurserymen will not keep a stock of quince trees, let every one who wishes to plant them turn nurseryman, as far as this goes, and raise them himself. The quince grows readily from cuttings, and it is in many places practicable to plant them yet. Where it is too late to set the cuttings this fall, prepare them for spring planting. Choose good, vigorous shoots, cut them up in pieces of about six inches in length, and tie them in convenient bundles. Bury in the cellar, or pack them in moss, as suggested in the article on callusing cuttings in October last. Another way followed by some cultivators is to dip the lower ends of the cuttings in thin mud made of loamy soil, taking care that each one in the bundle is coated for about an inch. These may be set on the cellar floor, or in any cool place where it will not freeze severely. If too dry, sprinkle now and then. The mud prevents the cuttings from drying out, and induces the formation of a callus.

In procuring cuttings take care to get them from good trees. There is much confusion in names. The Apple or Orange variety is generally preferred. Rae's seedling, scarce as yet, is a fine variety.

Native Grapes Under Glass.

It has been generally believed that our native grapes, if they did not deteriorate, at least did not improve by growing them under glass. The results obtained by Mr. Saunders at the Experimental Gardens in Washington show that such is not the case. He has a small house with several native varieties, noticeable among which are the Iona and Adirondac, varieties which from local causes he is unable to fruit in the open air. The structure is of the simplest and cheapest kind. Two board fences, one four feet and the other eight feet high, are set about six feet apart, and roofed over with the cheapest sort of sash. These figures are approximations, as we did not take measurements. The ends are boarded up, wide ventilators covered with wire netting are made in the lower wall, and an arrangement provided for ventilation at the top of the rear wall—if a board fence can be called a wall. The vines are planted outside, and brought into the house, where they are perfectly free from mildew and the attacks of insects and birds. Here was the Adirondac full of fruit, which had a most luscious sweetness, but was without character. The Iona made bunches probably more beautiful than Dr. Grant ever dreamed of, and of a flavor that would be hard to match among the best foreign varieties. The Salem gave us a new idea in grapes, as it possesses, grown in this way, a flavor peculiarly its own. Mr. Saunders informed us that the vines in the house had no care beyond what would have been given out of doors. This experiment is worthy the attention of those who live in high northern localities, as well as those who are in situations where grapes generally fail. A structure of the kind we have described will require but a very small outlay, for which the certainty of obtaining fruit will more than compensate. Mr. Saunders has arrived at the conclusion (with which many will not agree) that the arm system of training is a failure, but believes in renewing the vine from as near the root as possible, and fruiting from the upper buds.

A Fungus on Fruit Trees.

The many afflictions which come upon the fruit grower in the form of mildew, rust, blight, curl, etc., have from time to time been ascribed to electricity, atmospheric causes, (whatever they may be,) insects, and fungi. In the last two we have something tangible and capable of investigation. One field, that presented by the insects, is being thoroughly explored by many enthusiastic workers, while the equally important one, the fungi, is in this country well-nigh neglected. The subject is one of great difficulty, and needs the most patient labor. The fungi which prove injurious to our trees are exceedingly minute, and often manifest their presence only after the mischief is done. The popular idea of a fungus is that it is a toad-stool or mushroom. While all toad-stools are fungi, all fungi are not toad-stools; indeed, those which give us the most trouble bear no general resemblance to toad-stools. The toad-stools live upon decaying animal matters, and as they act in a measure as scavengers, they may be considered as useful rather than otherwise, while the microscopic

individuals which produce mildews, blights, rusts, etc., are so small that they can live within the tissues of a leaf, and are only visible to the eye when they break through to the surface to bear seeds, as we may call the minute dust by which they are reproduced. Minute and obscure as they are, these vegetable forms have, like larger plants, been classified and arranged in genera and species. To give an idea of one group of these small fungi, we present engravings of one that has been found very trouble-



Fig. 1.—FUNGUS ON LEAF.

some in the apple orchards of East Tennessee. Upon the upper surfaces of the leaves are discolored spots, which upon the under side of the leaf appear as in figure 1, and look very much like some forms of skin disease in the human subject. There is an elevated, more or less regular, ring surrounding a discolored spot. Upon magnifying these spots, that which appeared to the eye as a disease becomes a structure of great beauty. The ring is made up of minute cylinders; the mouth of each is handsomely fringed with long, transparent hairs. One of these is shown in figure 2 very much enlarged. Fungi presenting this general appearance are called "Cluster-cups." Within the cups is a mass of minute brownish grains, which serve to reproduce the plant; these require a high magnifying power to see them distinctly. They are more or less angular from mutual pressure. The hairs which fringe the mouth of the cup are very sensitive to moisture, and curl up when wetted, and close the orifice. A curious thing about some of these fungi is that they are dimorphous, *i. e.* come in more than one shape. The spores do not produce the same plant, but one so unlike it as not to appear at all related to it, but the spores of the second plant may produce plants like the first one, or it may take still another generation to do so. The early growth of these fungi takes place within the leaf, and these cluster-cups, which correspond to flowers, break up through the surface. There is much connected with this subject which would be out of place in a popular description, and we have given only those points which are readily understood without introducing technical terms.



Fig. 2.—CLUSTER-CUP.

The Cluster-cups above described were sent us by T. W. Sparkman, Clifton, Tenn., who says: "It has been on some trees in this vicinity several years; it gradually gets worse, and the trees fall until they at length die. One of the worst trees is a wild Crab Apple, of which I send some specimens. There are a great many limbs attacked, and some of the apples."

At first we supposed it to be a new fungus, but find it was described in 1831, by that industrious botanist, the late L. D. deSchweinitz, in the Transactions of the American Philosophical

Society, where he calls it *Ecdium Pyratum*. The generic name is from the Greek, and means *like pustules*, and the specific one, *Pyratum*, is given because it grows upon *Pyrus*, the apple. Mr. S. asks what is the remedy. This is not so easy to give. If well established in an orchard it is difficult to tell where to begin. The trees should be watched early in the season, and if only a few are affected we should cut them down, but this should be done before the fungus gets old enough to propagate itself. To know exactly what is best to do to prevent its spread one must study its appearance on the spot.

Growing of the Potato from Cuttings.

BY PETER HENDERSON, BERGEN CITY, N. J.

About the first of last April, I stepped into the store of B. K. Bliss & Son, and innocently asked for 10 lbs. of the Early Rose Potato, which he had offered in his advertisements at the modest price of \$2 per lb. Mr. B. informed me with all suavity that he could not let me have 10 lbs., but would (here he looked patronizingly) let me have half that quantity. I had agreed to let a friend have 5 lbs. of this famous Potato, and had intended the other 5 lbs. for my own planting, but being the possessor of only \$10 worth (5 lbs.), I of course handed them over to my friend who had deputed me to buy. He in turn handed me



Fig. 1.—POTATO CUTTING.

back one of the precious tubers—weighing exactly 4 oz.,—which he requested me to "experiment" with. Now, whether it was the patronizing manner of my illustrious rival, or whether it was the suspicion of a covert joke made by my friend when he handed me this small potato to "experiment" with, I do not know, but an experiment was begun. On the 6th of April, I cut this 4 oz. Potato in two pieces, so that each surface would present the greatest number of eyes. I then placed them on the soil of one of our green-house benches, keeping them entirely dry until the cut part had healed over, and the shoots began to start from the eyes—the temperature of the green-house averaging perhaps 70 degrees. As soon as the shoots got to be 4 or 5 inches in length, they were cut off, as in figure 1, about 4 of an inch from the surface of the potato, or far enough off so as not to injure the latent eyes that were yet to start. The cuttings were then placed in the propagating house, and shaded and watered until rooted in the usual way, when they appeared as in figure 2. They were then potted in 2-inch pots, in rich soil, and started to grow in the same tem-

perature in which the potato had been placed. As the season advanced shoots in great numbers were thrown out by the Potato, which in turn were submitted to the same process of rooting. As the first shoots grew to lengths of 7 or 8 inches the tops were cut from these and used as cuttings,—so that by the first of June this small potato of 4 oz. had given me nearly 150 plants, every one of which was equal to a "set" made from a tuber. These were planted out on the first week in June, in land very ill suited for the growth of the Potato, and the crop, when dug in September, weighed exactly 450 pounds, or an increase of about 1000 fold.

It may be questioned if this process is of any practical value, or whether it will pay. It is not claimed that there is any use in the practice if potatoes are being sold at ordinary rates, but

may be doubted if there is much new in either Horticulture or Agriculture; processes that are suggested to us by circumstances to-day may have been practised by others a century ago, and if published to the world at all, have long since been forgotten; but there is little doubt that this practice of growing potatoes from cuttings will be new to ten thousands of your readers, though the principles involved, and perhaps the practice followed, have been long known to many experienced Horticulturists.

Treatment of House Plants.

In an article on House Plants, in October last, it was mentioned that the plants should be gradually accustomed to their change, and this fact is to be borne in mind. Whenever the external temperature will allow it, open the window for a while during the warm part of the day. Watering is oftener overdone than neglected. But a few plants, such as Cuscuta and semi-aquatics, will thrive if the soil is kept soaked. The roots need air as well as moisture. The practised eye can tell by the looks of the soil, or the pot, if a plant needs water. Better let it get a little too dry occasionally, and then give it a good drenching, than to apply frequent dribblings. Dryness of the atmosphere is one of the great troubles of in-door flower-growing, and this must be overcome as much as possible by evaporating water on the stove or furnace. Where the room is heated by an open fire, there is less difficulty. Another plan is to have a shallow box of the size of the window-sill, or the table upon which the plants stand;

this should have sides about 3 inches high, with some 2 inches in depth of clean sand in it. The pots are placed on the sand, which is to be kept damp. Dust, the housekeeper's great enemy, is another thing the plant-grower has to contend with. To be healthy, the plant must have clean foliage. Some very careful persons throw a sheet, or other light cloth, over the plants, while the room is being swept. This must, of course, be prevented from resting upon the plants, by some contrivance. A stout rod, made to fit in to each corner of the plant-table, would answer. Give the plants a showering as often as necessary to keep them clean. Set them in a sink, or bath-tub, and shower the foliage with water from a pot with a fine rose. If a plant gets very dirty, as sometimes will happen, sprinkle it to moisten all the leaves, and then go over it and rub each leaf gently between the thumb and finger, to loosen the dirt; after this give a plentiful showering. This can only be done with smooth-leaved plants. The outsides of the pots should be kept clean by the occasional use of a scrubbing-brush and water.

FORCING RHUBARB.—Those who have an abundance of rhubarb roots may have the leaf stalks during the winter with but little trouble. Take up some strong roots and place them in a

barrel with a little earth. Cover the barrel and set it in a warm place, and the leaves will soon push. Grown in this way rhubarb is crisp, tender, and well blanched. Roots that have been thus treated are not worth planting out again.

FUNGI AS FOOD.—In another column is an account of a minute and troublesome fungus. Some of the fungi, such as the mushroom and morel, are prized as delicacies, but the edible ones are not confined to these. Unfortunately, it is difficult for most persons to go beyond the mushroom for fear of eating some of the poisonous ones. As a step towards increasing the knowledge of these plants, and to enable people to know the good from the bad, the Royal Horticultural Society (Eng.) held an exhibition of fungi, and it was found that the number of edible ones was much larger than was supposed. The Rev. M. A. Curtis, of S. C., has investigated the subject more thoroughly than any one else in this country, and has promised a work on American Edible Fungi, the appearance of which we look for with no little interest.

Look Out for Your Seeds.

After all possible care has been expended in collecting seeds, they are often lost through inattention. Mice are exceedingly fond of some kinds of flower and garden seeds, and their access to them should be guarded against. In keeping the mice out, it will not do to have the box thoroughly air-tight. Seeds must, of necessity, contain more or less moisture, and if kept in considerable quantities in a close vessel, they will mould. The temperature at which seeds are kept is of but little consequence with many kinds, while others are injured by too great cold. A place in which the temperature ranges uniformly between 32 and 40 degrees is, perhaps, best. Peas and beans are apt to be infested by the weevil. Placing these in a close bottle, with a few drops of turpentine, is said to be the best method of treating the seeds.

A Chapter on Honey Locust.

"E. S." Highland, Kansas, writes: "Give us a chapter on Honey Locust. At present it bids fair to become the most valuable tree for this country. It grows here anywhere, and under all circumstances where any other tree lives, is good for hedges, or groves; as yet, it is free from insects or diseases of any kind, does not sprout from the roots, never winter-kills, is easily transplanted, and is a very beautiful and graceful looking tree. Even grasshoppers do not injure the young seedlings. There are two kinds here, one with thorns, and one without. Now, will seeds from a thornless tree produce thorny seedlings, or will seeds from thorny trees produce thornless seedlings? We want the thorny ones for hedges and the other for groves. There are some good specimens of Osage hedges here, but the plant is objectionable. It kills out in wet places, much of the wood freezes down in winter, it sprouts from the roots in plowing close, and various kinds of insects, especially grasshoppers, are very destructive to it."

It is not often that a correspondent does so cleverly for himself that which he asks us to do for him. He has given so complete a "chapter on the Honey Locust," that there is but little to say in regard to its availability as a hedge plant.

We have frequently advocated its merits as the plant best suited to form a barrier in our northern climates. The thornless forms are



Fig. 2.—ROOTED CUTTING.

when they are sold at the rates even yet paid for the Early Rose, there is no doubt whatever of its utility. For example, 1 lb. of potatoes so grown will easily produce 500 plants, making 500 hills, which, with ordinary culture, will give 3 lbs. per hill, or 1500 lbs. Now the process of propagation is neither difficult nor costly, and can be done just as well in a common hot-bed as in our best-appointed green-houses; the ordinary hot-bed sash, 3 feet by 6, will hold 500 plants, if placed in the soil of the hot-bed exactly as Lettuce or Cabbage plants are pricked out, and treated much in the same way by careful shading and watering until the cuttings have rooted. These in turn, as they grow, make other cuttings from the top, as before described. If the variety is very scarce the crop may be still farther increased by taking cuttings from the plants after they have made a growth in the field. Without resorting to the glass propagation at all, a potato crop may be doubled or trebled in quantity by "slipping" the shoots, and planting them out at once, if there is a continuance of rainy weather for two or three days, at the time it should be done, in June. The thinning out of shoots from the regular planting will do no more injury to the plants than the thinning out of a hill of cucumbers or melons would. It is not claimed that the growing of potatoes from cuttings is new; in fact, it



HEART-LEAVED MANNETTIA.

more common at the West than at the East. We doubt if there is any certainty that the seedlings from the thornless form would be without spines, but in sowing for hedges should prefer not to risk it. In a large number of seedlings from thorny trees some will be found that are thornless. The only sure way to get the smooth variety for shade trees is to graft it. Seeds are readily collected, or they may be had of the dealers at about 75c. per lb. If kept dry they should at sowing time be scalded, and allowed to soak until the skin is softened. We once collected a quantity, mixed them with earth in a box, and allowed them to remain exposed to the weather all winter. When planted in the spring they came up as readily as beans. The seeds may be sown along the line of the hedge, but it is much better to put them in a seed bed, where the young plants can be cared for. They may remain in the bed all winter, and the next spring the hedge can be set. Cut the plants back to three inches, and set a foot apart.

A Pretty Climber.—The Mannettia.

Aside from their usefulness in covering objects which we wish to conceal, climbers have a grace peculiarly their own, and are often used in good taste without any utilitarian view. Some kind of support, a rude stake, or an elaborate trellis, covered with climbers, may often be introduced with good effect. The labored trellises are usually very ugly, but a rapidly growing vine will soon hide the mechanical appearance. For low trellises, such as may be made by stretching wires along the front of a veranda, there are several green-house plants which may be used. Our prolonged hot weather

allows us to enjoy out of doors many plants that in England and the north of Europe can be grown only under glass. Every year the number of these is increasing, as experiments are made with tropical plants in the open air. In the spring of 1867, friend Meehan, of the Gardener's Monthly, sent us a plant of *Mannettia cordata*, (sometimes called *M. glabra*), which was set out, but as it did not have sun enough it flowered but little. In autumn the somewhat tuberous root was taken up, put in a pot of earth and kept rather dry in a cold room all winter. Early in spring it started, and when the weather became warm, it was turned out in a sunny place,

against a wire trellis, and it has been beautiful all summer. The engraving shows the flowers and leaves of the natural size. The flowers are of a brilliant scarlet, and remain for several days. In England this is regarded as a stove plant, requiring even a higher temperature than the green-house. It is propagated by root cuttings or from those of green wood. We suppose that most florists keep it, at all events, they ought to, and popularize such a pretty climber, and one that by the method above indicated, can be managed by those who have no hot-house.

Monkshoods—Aconites.

Among the old-fashioned herbaceous perennials the common Monkshood (*Aconitum Napellus*) is one of the best known, and it has long been cultivated for its spikes of curiously shaped, dark-blue flowers. One of the parts of the calyx is very much enlarged, and is so strikingly hood-shaped as to make its common name more appropriate than such terms sometimes are. Several other species are in cultivation, but all that we have seen in our gardens are of the blue-flowered section. There are species with yellow and with reddish flowers. There is a white-flowered variety of *A. Napellus*, but it is not nearly as fine as the Variegated Monkshood (*A. variegatum*.) This has light-blue flowers, finely edged with white. The Chinese Monkshood (*A. Chinense*) has its flowers in looser spikes than the common one, and of a remarkably deep blue. The engraving is from this species, and while it gives only a portion of a spike, very well illustrates the singular shape of the flowers. All the above are from foreign countries. We have two native species, one



CHINESE MONKSHOOD.

with blue flowers, (*A. uncinatum*.) found in the Alleghenies, and a white-flowered one (*A. reclinatum*) in the mountains of Virginia and southward. These are seldom seen in cultivation, nor are they particularly desirable, as they have weak stems, and are of a straggling habit. In the Monkshoods all the visible portion of the flower is the calyx, of five parts or sepals, one of which is enlarged to form the hood; there are but two petals, and these are of a shape so unusual that they would not at first be recognized as such. At the upper part of the engraving is a flower from which the calyx has been removed, leaving only the two petals and the cluster of stamens and pistils. By a stretch of the imagination a resemblance can be seen in the petals to a pair of swans attached to the cluster of stamens as a car. In some localities the common Monkshood goes by the name of "Cupid's Car." It should be known that all the Monkshoods are poisonous when taken into the system, though perfectly safe to handle. Some careless gardeners have by mistake mixed the roots with those of horse-radish, and fatal results have followed. There is so little resemblance in the appearance of the two roots that it is not easy to see how such a mistake could be made. An English writer proposes to banish the Monkshoods from cultivation because they are poisonous. He should include the Larkspurs, Hellebores, Ranunculuses, and Fox Gloves, for they, as well as other garden favorites, are poisonous also. As long as the equally poisonous Stramonium grows along the road-sides and in the fence corners, and the Poison Hemlock is found in the close neighborhood of dwellings without molestation, we doubt if the deleterious character of some of our garden plants will prevent their cultivation.

THE HOUSEHOLD.

(For other Household Items, see "Basket" pages.)

Sea-Side Fare.—The Mussel.

This series of articles, describing along-shore fare, concludes with an account of one which, in this



Fig. 1.—EATABLE MUSSEL.

country at least, is less prized and less used than any other of those we have noticed. The common Mussel (*Mytilus edulis*) is found on both shores of the Atlantic. The shape of the shell is shown in figure 1, but it is given under the average size. The shell without is of a purplish-black color, within of a much lighter color and a pearly lustre. The animal, or meat, is conformed to the shape of the shell, and is of a more or less dark orange color. It has a number of stout fibres, called a beard, by which it attaches itself quite firmly to rocks, mud-banks, etc.; this is to be removed in preparing the mussel for food. In Europe, the mussel forms an important portion of the food of the people near the coast, and they are consumed for fish-bait to such an extent that large sums are invested in raising them. Those are said to be best which grow at the mouths of rivers, where they are left bare at low tide. The author of an English work, called "Wholesome Fare," says: "Mussels are occasionally unwholesome or poisonous. There is no test—onion, silver spoon, or other—by which to know whether mussels will prove injurious or not. Something may depend on the season and on their fresh-

thoroughly clean, the mussels are put into a pot, covered, and kept over the fire until all have opened. The meat is to be picked out and the adhering beard removed, when they may be served with melted butter, or stewed. The following is the method of pickling mussels practised in a celebrated N. Y. restaurant: The mussels are opened by boiling in the shell, as above directed. A pickle is made with three pints of vinegar and one of water, a few whole grains of allspice, pepper and cloves are added, the whole allowed to come to a boil, and when the pickle is cool it is poured over the mussels, which are placed in glass or earthen jars. Besides the true Mussel described above, there are several others known by the name, although conchologists place them in a separate genus; some of them, being found only in deep water, are comparatively rare. We figure the most common, which is abundant in shoal water, and has the reputation of being unfit for food. It is much larger than the common Mussel, different in shape, with a rougher shell and a more copious beard. This is the *Modiola plicatula* of the conchologists, and is called "Yellow Mussel" by the fishermen.

Household Talks.

BY AUNT HATTIE.

How do you like my new picture frames? They are perfectly simple, and, like simple things generally, are pretty. An ingenious neighbor of mine taught me how to make them. Those who are fortunate enough to live in the country, and more fortunate still to have a wheat stack in the yard, can readily obtain the straws. Select any quantity of white or dark straws, as preferred, being careful to use none but perfect and unbruised ones, and choose those as uniform in size as possible. Some narrow lustrous ribbon will be required for trimming, or you may use instead, colored worsted, cheville, or silk, as convenient and to your taste. A straw carefully split and flattened out, first wetting it, makes a very neat fastening. When ready to make a frame, take three or four straws, lay them

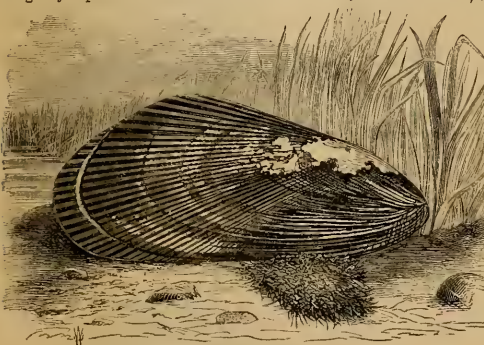


Fig. 2.—"YELLOW MUSSEL."—(*Modiola*.)

ness, and also on the eater's individual constitution. Some persons eat heartily of mussels at all times with impunity; others dare not swallow a single one." It is perhaps due to this uncertainty that mussels are not generally popular on our sea-board; still, with many, they are regarded as a choice delicacy. Pickled mussels, especially, are served at city restaurants, where they are held in high esteem by the lovers of good things. They may be stewed, scalloped, etc., in the same way as oysters. In whatever way they are cooked, they are first boiled out as directed for clams. The shells being made

in a horizontal position, and holding between the thumb and finger, pierce with a needle and thread, securing firmly. Do both ends alike, and make the four sides in the same manner; adjust according to the size of the picture to be framed, fastening the corners together with the needle and thread. Some cut the ends even with a pair of scissors, but it gives a prettier effect to allow the central straw to remain a little the longest, as shown in the engraving. Trim the corners, paste the picture on the back, and it is done. If it is desired to hang the picture on the wall, a cord and tassel of worsted may be made, or a simple band of the ribbon may be used. Two straws with a third across them may be fastened to the back to form a support, which will allow the frame to stand upon the table or mantle-piece. The *Agriculturist* has already figured frames made of the brown stems of evergreens. Raisin stems dipped in melted red sealing wax make an exquisite frame in imitation of coral. Work of this kind affords pleasant occupation for winter evenings. Cone frames are very pretty, but require considerable time to make. A rough frame is provided and covered with scales of pine cones, which are put on

singly with small tacks, neatly overlapping one another like the scales of a fish. Whole cones are used here and there, as taste may dictate.

One of the most acceptable desserts recently introduced, consists of a corn starch custard pudding, garnished with the sweetened and flavored froth of the whites of eggs, or Meringue, as it is called. The recipe is as follows: *Corn Starch Pudding*.—Set to boil one quart of sweet milk; then moisten in a teacup with a little milk 3 table-spoonfuls of corn starch; beat thoroughly the yolks of 4 or 5 eggs, adding sugar enough to sweeten the whole of the pudding. Then beat to a stiff froth the whites of the eggs, adding a very little sugar and flavoring extract; but be careful not to reduce the froth. As soon as the milk boils, stir in the moistened starch. Let it boil up once, take from the fire, and stir in immediately the yolks of the eggs, pour into a pudding dish, and place on the top the frothed whites, spreading as evenly as possible. Set in the oven until the top or Meringue is of a fine light brown, when the pudding is done. To be eaten cold. The same lady also gave me a recipe for a plain rice pudding, and as I



STRAW FRAME.

have frequently tried it and found it to be very good, I am desirous that others should know how to make it. *Rice Pudding*.—Soak over night in cold water a coffee cup of rice. In the morning add two quarts of milk; sweeten and spice to taste. Place in the oven; when the rice rises in the pudding it is done. Quite simple and plain, but more wholesome and good than more elaborate ones.

Keeping a Family Record.

Whoever has had occasion to trace his lineage back to the first settlers of the country has learned the very loose way in which family records are usually kept, and been surprised to find how little intelligent men know about their ancestors. It is not unusual to find family records, but they are in an imperfect state, on stray pieces of paper, liable to be lost, or in small blank books mixed up with family expenses, the births in one place and the marriages in another. It is quite common to find people who cannot tell who their grandparents were, or if they know these, they are ignorant of their grand uncles and aunts. Many who are intelligent thus far, perhaps by reason of a personal acquaintance with these relatives, can trace their kindred no further back. Not one in a hundred preserves even the names of his ancestors beyond the third generation. As a people we have little pride of ancestry, and are quite too busy with the present to think or care much for the past. And yet the past has had much to do with our present, and we who are now upon the stage will have quite as much to do in moulding the characters and shaping the destiny of those who are to come after us. It is a duty that we owe to our children and children's children to put them in possession of the names and dates in the family history with which we are familiar, and which will soon be forgotten if they are not recorded.

Town, church, and cemetery records are important in their places, but they ordinarily contain only fragments of a family history. It is not uncommon in completing the record of a family that lived a hundred years ago to find the dates in many different towns where the children were born or died. What is wanted is a brief record of the dates of marriages, births, and deaths, in tabular form. To this should be added the name of the place where the family resided when the children were born, and the particular farm or house, if it can be designated. It is always interesting to know where our ancestors lived and what their occupations were. It is desirable that a man should preserve in permanent

form not only his own family record, but that of his father and those of his paternal ancestors as far back as he can trace them. There are blank forms of these records published, and in many of the issues of the American Bible Society there are pages with appropriate headings for them. The particular form is of less importance than that the record be made in some place where it will be preserved and cherished by those coming after us.

"But what is the use of the record?" some will ask, who have a sharp eye to the dollars and cents. It may be of no pecuniary value whatever. It will add nothing to the fertility of your fields and make no better sales for your crops. Pedigree may count for much less pecuniarily in a man than in a horse. And yet even in this democratic country and in this utilitarian age, it may be worth a man's while as a matter of intelligence to know something of his origin, something of the homes, occupations, and characters of his ancestors. The knowledge would certainly do him no harm, and it might throw some light upon the tastes and peculiarities that he sees cropping out in his children, and help him to better methods of training. We inherit much beside worldly estate and physical constitution from our progenitors. A little study of this inheritance may profit us quite as much as watching seed sowing and harvest. Let us have the Family Record.

Recipes and Household Hints.

Pickled Oysters are always in place at holiday tables, and on festive occasions generally. They are sold by the dealers at a high price, but are easily prepared at home. The chief thing to be observed is, not to overdo the matter at any point; much must be left to care and judgment. Select good-sized, plump oysters, put them over the fire in their own liquor and simply scald them; the moment they look white and firm they are to be taken from the fire, and laid out singly on a clean board or table to cool—if they drain thoroughly, or become slightly dried, all the better. Allow the liquor to settle, pour off the clear portion and mix with this and vinegar sufficient pickle to well cover the oysters. The proportions to be used will depend upon the strength of the vinegar, and will vary from one-third to one-half oyster liquor. The pickle should not be more than pleasantly sour; it is a common mistake to use too much vinegar. The right proportions of liquor and vinegar being ascertained by taste, whole cloves and pepper, with broken-up mace, are to be added. In using spices no rule can be given, and it is better to err on the side of moderation. Boil up the pickle with the spices, allow it to cool, and pour it over the oysters placed in a proper jar or dish. They will be fit to use the next day. Sometimes thin slices of lemon are added when the pickle is cool, but we prefer to allow each person to add his own lemon, if he likes it, when the oysters are served.

Cleansing Tainted or Musty Barrels.—"A. N.," Lindley, Mo., writes: "I have practiced the following plan for the last thirty years with complete success. Soak the barrel thoroughly with water, pour out the water and while still wet fill the barrel with clean, dry sand or loam, but sand is the more easily removed. Let it stand a few days, turn out the sand or earth, and it will be as free from taint or must as when new."

A Dish of Chestnuts.—"J. T. B.," Falls Church, Va., gives the following experiment: "I removed the shells from a quart of chestnuts, and parboiled them. I then took off the thin underskin, and put them back into the saucepan with a quart of milk, salt, nutmeg, and two big teaspoonsful of flour stirred with water for thickening. I stewed until the chestnuts were soft, taking care not to break them in stirring. This makes a rich and excellent dish." This is worth trying.

Pickled Artichokes.—"Wash the artichokes clean, and pour pretty strong salt water, boiling hot, over them, and let stand until cool; spread on a cloth to drain; put in a jar and pour boiling vinegar over them, and if not too large they

will be ready for the table the next day, and no pickle is better." Of course the Jerusalem Artichoke that grows somewhat like a potato is intended.

Keeping Sausage Meat.—Jane Barton writes: "Cook fresh sausage as for the table, without flouring it; then put it in layers in a sweet earthen or stone pot with gravy from running hot lard over each layer. It will be as good as when first made, as we are eating it now in October with a good relish, and it is delightful."

Breakfast Puffs.—Take 1 pint of milk, 1 pint of flour, 2 eggs, a lump of butter the size of an egg, and a pinch of salt. Place the flour in a basin, put the butter in the center of the flour, break in the eggs, and work the butter and eggs together thoroughly; then gradually add the milk, mixing all together to form a smooth batter. The puffs may be baked in a cast-iron pan with small divisions, similar to the "French Roll Pan" figured in January last, page 25, previously heating it, but a tin pan of similar shape is generally used, or small, separate party-pans, though less convenient, will serve. Butter the pans and fill them about two-thirds full with the batter and place in a quick oven. They take but a few minutes to bake, are light, and excellent, as the writer happens to know.

Bay-Leaves are frequently directed for flavoring custards, and similar articles of cookery. It is the leaf of the *Laurus nobilis*, the poetical "Laurel" or "Bay." The leaves of the Cherry Laurel, or other Laurel, should not be used in their place. The true Bay-leaf is kept by city druggists.

Folding Napkins.

For every-day family use there can be no improvement on the usual way of neatly folding the napkin in a square form, whether it is placed in a ring or not. But there are occasions when one wishes to decorate a table, and then the napkin can be made to contribute to the general effect. Some of the forms in which napkins are folded are very elaborate; we give two simple and neat ones. Like many simple operations, the folding is easy

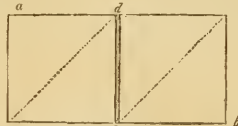


Fig. 1.

enough when one sees it done, though not readily described; but we will try and make it plain by the use of a few diagrams. Take a towel-shaped napkin, and fold over one-third, then turn it backwards, and the napkin will be folded in three, not over and over, but so that the edges when opened would be in the position of the lines in the letter N.



Fig. 2.

Then fold the ends over until they meet in the middle, as in figure 1; then fold the corner *a* down to *c*, and the corner *b* up to *d*, and it will give the form indicated by the dotted lines. Turn this over and fold it in halves lengthwise; open the points and it will be like figure 2. Bend the point *a* over to the left and tuck it under the groove at *b*, and bring the point *c* around and place it in a groove which will be found when *a* is in position. The result will be the form in figure 3. This is called the "mitre," and is usually set upon the plate with a piece of bread in the center. Another form, called the "water-lily," though it looks more complicated, is as easy to fold.



Fig. 3.

For this a square

napkin is required; fold it like a half-handkerchief. Bring the two points of the long edge up to meet

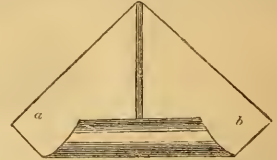


Fig. 4.

the center one, which will form a square. Roll up the corner opposite the points, as shown in



Fig. 5.



Fig. 6.

figure 4. Turn the napkin over and roll point *a* in about to the center, tuck point *b* in the groove, and it will give figure 5, which may be used in this shape, or by turning down the folds may be made into the form shown in fig. 6. Napkins when folded in any of the fancy forms should be slightly damp.

The Proprieties of the Table.

A friend writes thus: "By the proprieties of the table, I do not refer to the behavior of those who sit thereat, but to the proprieties to be observed in providing the food to be placed upon it. I know that some things go together very well, while others do not. I know that roast mutton and turnips seem made for each other, while sweet potatoes and corned beef were divorced by nature, and so with many other things. Now can't you tell us what goes with which?" Our correspondent's query touches the very starting point in good living, which does not consist so much in costly food as in the fitness of things. The trouble in the whole matter is that our people, while they are willing enough to expend money upon what furnishes their tables, are quite unwilling to give proper thought to their selection of food. It is somehow considered undignified or improper to make a study of gastronomy by man or woman. Under the plea of living on "good, plain food," a good share of our people lose much of the enjoyment of the table. "None of your mixed French messes for me," says many a one who regards beef-steak and onions, or corned beef and cabbage, as "good, plain food." French cookery is no different from any other good cookery, except to make the best possible use of the materials at hand. Much of the prejudice against French cookery arises from the fact that names that are not understood are applied to excellent dishes. *Fricandeau de Veau* would not be tried by one in a thousand of those who would accept and relish it under its true name of stewed veal, and so on. We have alluded to French cookery merely because the French people have studied the matter, and have found out the harmonies and contrasts of taste which exist, though perhaps in not as marked a degree, as well as those of color and sound. Our ladies pride themselves on their skill in selecting proper colors for dress, and if they would give the same thought to it they might acquire equal skill in discerning the harmonies and discords of taste. The enjoyment of a meal depends more upon the fitness of the things provided, than it does upon their rarity or richness. Our correspondent cannot be answered in a single article, but we will try to help her by giving some bills of fare, indicating "what goes with which."

BOYS & GIRLS' COLUMNS.

A Handful of Dust.

The tidy housekeeper would vigorously drive it from her kingdom with the broom; the little child would take it to make mud pies with; the philosopher thinks it worthy to be carefully examined—there may be some grains of precious truth in it. Let us borrow his spectacles and try to find them. Of course these spectacles are microscopes, showing us what a fly might see "with his little eye." Presto! change! The little brown heap has suddenly become a large pile of many colors and curious shapes. The glass shows what appear to be smooth pebbles, of many different kinds, bits of rocks broken from larger masses, ground small under many a wheel that has passed over them in the well-traveled road, their sharp corners worn away by exposure to the weather, and constant hard usage. Each bit has a marvelous history from the time when the frost, or the prying root of some plant, or the blow from some quarryman's hammer, or other sufficient force, loosened it from its long-time home and started it on its travels. When ground a little finer, and acted on by the elements, these fragments will be chemically changed, seized upon by growing plants, and transformed into portions of their organized substance, to start on a new round of experiences. Volumes of science and history would be needed to complete the record of a single one of these grains. Another look at the heap shows many rusty fragments of iron—brought perhaps from distant mines; they have done service in many forms, finally were struck off from the wheel-tires or the horse-shoes, and are slowly rusting away—not to be lost, but made over in new combinations. Here are shreds of leather—the boys and girls, who wear out shoes so fast, with almost tireless feet, can tell something of how these came there. Scraps of woolen, silk, and cotton, have done their part for awhile in the service of man, and are here awaiting further use. Fragments of bones, chips from insects' wings, bits of down from the bodies of birds, hair, wood, leaves—in short, mementos from almost every department of life, give food for abundant thought and fancy. Whoever can spend an hour or more in carefully studying a handful of dust with a microscope will find that Nature has abundant materials at hand for working over into the new patterns which she so lavishly displays yearly in the fields and forests, and by noting the wisdom there displayed, may add much to his own store.

Different Ways of Laughing.

Man is the only animal that laughs. Some creatures make a noise resembling laughter, but as "there is no fun in it," as the boys would say, it does not deserve the



No. 1.—A QUIET SMILE.

name. It is both amusing and instructive to observe the different ways of laughing; the varieties are as numerous as individuals, for almost every person has his own style, so distinct that he may be easily recognized by his laugh. Our artist presents three specimens, which



No. 2.—FULL OF FUN.

are fair samples of different classes of laughs. In each, the character is quite plainly indicated by the style in which pleasure is expressed by the muscles of the face.

First (No. 1.) we have a natural, quiet smile. The man enjoys anything comical, but has sense and self command enough not to be overcome by it. He has natural strength of character, which has been polished by education, so that his faculties are under control. Contrast his expression with either of the following. No. 2 is brimful of fun, and running over with laughter, which he vainly tries to hold in with his hand upon his mouth. He will giggle at the merest trifle—at a mistake of a companion, an odd motion by an animal, at almost any-



No. 3.—THE SIMPERER.

thing unexpected. He is good natured, weak, easily led, uncultivated, requiring great care to make him a useful member of society. No. 3, the "Simperer," has been educated in a very different school from No. 1. He believes in outside appearances; knows what is the latest fashion, wears much jewelry, carefully cultivates his whiskers, thinks all the ladies are in love with him, applauds him self with a continual smirk, and is altogether a silly, shallow-brained fop. He might be cured by sending him to the forests of Maine, to chop wood a few winters, but there is little hope of his having pluck enough to try this treatment, or any other requiring real manliness.

Our Presidents.

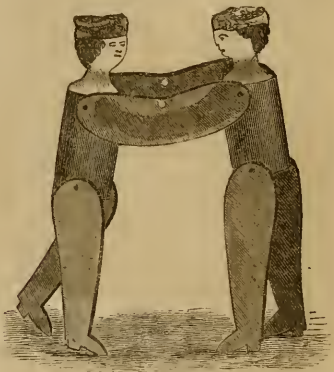
Every American boy and girl should know the following table by heart, and should also be able to give some account of the principal acts of the different men named. Those who will begin by committing it to memory, and then follow it up by reading some good biography of each President, will have a better knowledge of the history of the United States than is possessed by more than one-half the men and women in the United States.

Presidents of the United States.	Native of	Inaugurated.	Continued in Office.
George Washington	Virginia	April 30, 1789	2 years
John Adams	Massachusetts	March 4, 1797	4 years
Thomas Jefferson	Virginia	" 4, 1801	" "
James Madison	do.	" 4, 1809	" "
James Monroe	do.	" 4, 1817	" "
John Quincy Adams	Massachusetts	" 4, 1825	" "
Andrew Jackson	S. Carolina	" 4, 1829	" "
Martin Van Buren	New-York	" 4, 1837	" "
William H. Harrison	Virginia	" 4, 1841	1 m th
John Tyler	do.	" 4, 1841	to the 4 th of Pres.
James K. Polk	N. Carolina	March 4, 1845	4 years
Zachary Taylor	Virginia	" 4, 1849	1 y. 4m.
Milard Fillmore	New-York	" 4, 1850	to the 4 th of Pres.
Franklin Pierce	N. Hampshire	March 4, 1853	4 years
James Buchanan	Pennsylvania	" 4, 1857	" "
Abraham Lincoln	Kentucky	" 4, 1861	4 y 4 d
Andrew Johnson	S. Carolina	April 15, 1865	" "

A Picture for Boys.

A correspondent writes to the *American Agriculturist*: "I have indulged the habit of using tobacco in various ways, for more than twenty-five years. I learned it when a boy, because I wanted to do as men did. For a long time I could not perceive that it hurt me, except making my breath disagreeable, and my company unpleasant to those who disliked the smell of tobacco smoke. But lately I have begun to believe what friends used to tell me. My throat, head, and nerves are suffering from the effects of the use of the weed, and I know that I can have good health only by giving it up. Thus I am now doing, but it is like the struggle of a slave with a cruel master. I pass miserable days and sleepless nights; my spirits are low, every thing looks gloomy, I can not fix my wandering thoughts; I have headache, heart-ache, and aches I never imagined before. The worst of it is, I feel continually that just one cigar would drive away all these symptoms, make me feel natural, and bring back all the hopes and friends that now seem to have deserted me. Why not take it and end my troubles? Alas! it would only soothe my distressed nerves a little while, and then the old symptoms of tobacco poisoning would come back in full force. It's a terrible battle; I do not know how long it will last, or how it will end. Without some relief I fear I may go crazy. What shall I do?"—There, boys, look at that picture before you light a cigar, or try a chew. It expresses the experience of almost every one who has formed this habit. Will it pay to lose health, and become a slave? If you want more evidence before

deciding, ask the next friend you may meet who has long used tobacco, whether he thinks it best. We never yet found a man who would advise another to form the habit. To the sufferer who writes for advice, we would say, "fight it out on this line." It will not "take all summer." In a few weeks, at furthest, the habit will be broken and you will feel the happiness of a clear head, elastic limbs, improved general health, and a free spirit.



An Amusing Toy.

Almost any boy can whittle out from a soft pine stick two figures like those shown in the engraving. The body and head of each are made of a single piece about half an inch thick. Two thin pieces a little curved in the middle, for the elbows, represent the two arms joined together as in wrestling. The legs are each made of one thin slip of wood, and are attached to the body by pins, so as to hang loosely. The arms are placed on at the shoulders in the same manner, and the figures are thus made to look like two boys in a position for wrestling. They can be painted, if convenient, or merely marked with ink, to suit the fancy. When all is ready, pass a thread about six feet long through the holes in the arm near the elbows. Fasten one end of it around the leg of a table or chair near the floor, and hold the other end in the hand. The images should be two or three feet from the lower end of the thread. Now by gently twirling the string the images will be made to wrestle in a very comical way; sometimes one will go down, then the other, then both, and by a little management they can be made to perform an almost numberless variety of very queer antics, to the great amusement of the little folks.

New Puzzles to be Answered.



No. 332. Illustrated Rebus.—Truth painfully acknowledged.



No. 333. Illustrated Rebus.—Something for all to know.

Answers to Problems and Puzzles.

The following are answers to the puzzles, etc., in the November number, page 419. No. 329. Enigma.—Ink... No. 331. Illustrated Rebus.—Manse in human eye time man in aches scow rt less thousands more; or, man's inhumanity to man makes countless thousands mourn.



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BLOWING BUBBLES.—Drawn and Engraved for the American Agriculturist.

Blowing bubbles will always be a favorite amusement. Children make theirs with soapsuds and a clay pipe; men and women use various contrivances. Every few days we hear of some new and wonderful scheme for getting rich, some way of restoring health, or some infallible method of enjoying pleasure—these are the bubbles which older people make and chase. They are as bright, as fleeting, often not half so satisfactory as the beautiful globes that the little girl can expand with her breath from the dish of suds. There is much to be learned from soap bubbles. Philosophers have studied many things connected with them with great interest. They have carefully computed the thickness of the film composing them, finding it less than one ten-thousandth part of an inch. Sir Isaac Newton experimented with bubbles

in pursuing his researches concerning the laws of light. The beautiful colors displayed on their surface attracted his attention, and he wanted to know the reason of their appearance. People who saw this grave old man apparently playing like a child thought him crazy.

Spots on the Sun.

With a good telescope, and sometimes by the eye alone, dark spots may frequently be seen upon the face of the sun. They vary much in size, some of them covering thousands of square miles in extent. Recently a very remarkable one has been noticed, extending over an area larger than the whole of the earth's surface. It was in shape like a letter Q, and the long curled part was surrounded by an immense number of smaller spots less

dark in color. Many theories concerning these spots have been given; one view quite generally held by astronomers is, that the sun is surrounded by a luminous atmosphere, and that the dark spots are places where this atmosphere has been disturbed and torn asunder, so that the body of the sun becomes visible. As yet there are no means of knowing the exact truth in the matter. We only know that by some wonderful arrangement light and heat for the solar system are continually supplied, and that agencies almost inconceivably vast must be employed to produce the immense force exerted by the sun.

There are many Premiums for Boys and Girls, and many hundreds get them each year. You can get one this year for yourself or your home.

THE BEST AND MOST ATTRACTIVE OF ALL JUVENILE MAGAZINES.

OUR YOUNG FOLKS:

Edited by J. T. TROWBRIDGE and LUCY LARCOM.

The conductors of OUR YOUNG FOLKS are determined to spare no pains or expense to make this Magazine the best of its kind in the world. While they will procure from the most popular and able writers articles of the most attractive character, they will also give the Magazine a more practical cast than heretofore. A greater proportion of useful articles will be found in the forthcoming volume,—on History, Biography, Science, Gardening, Manners. The following are some of the principal features of

OUR YOUNG FOLKS FOR 1899.

THE STORY OF A BAD BOY, BY T. B. ALDRICH.

Forming the narrative of a boy's life and experiences in an ancient New England seaport, will be the leading Story in OUR YOUNG FOLKS for the year 1899. The picturesque legends and traditions of the town, and the eccentric characters peculiar to every New England Village, form the background upon which the author has traced the career of a genuine Yankee lad, whose animal spirits and healthy love of mischief led him into laudable amusing adventures. The Bad Boy is a close study from life, and will be recognized at once, by any one familiar with the species, as a faithful delineation. He is a fresh character in American juvenile literature, which is over-crowded with unnaturally good boys.

GARDENING FOR GIRLS.

This highly interesting and important story has been written by the AUTHOR of that popular work "Six Hundred Dollars a Year," and is intended to convey, in an entertaining form, hints to young girls as to a useful disposal of their time, and to give valuable assistance in the study of Botany, serving the purpose for which it was answered for boys to the admirable serial "Farming for Boys."

HOW TO DO IT.

EDWARD EVERETT HALE will contribute, under the above title, various papers—written for the practical instruction of grown-up boys and girls, and of young men and women,—in the methods of life. They will include suggestions as to the way—How to Talk; How to Lead; How to Write; How to Travel; How to act in Society; and How to Work.

THE WORLD WE LIVE ON.

Under this title Mrs. A. O. ASSIZ will give a series of papers.

The conductors of "OUR YOUNG FOLKS" being fully sensible of the great interest felt by parents and educators in the cause of juvenile literature, will give their best endeavors to make this magazine worthily answer all reasonable demand. They will hope to make it such a means of instruction and entertainment that it shall be indispensable to every household.

TERMS—Single or Specimen number, 20 cents; Yearly subscription, \$2.00 in advance; Three copies, \$5.00; Five copies, \$8.00; Ten copies, \$15.00, and \$1.50 for each additional copy. The Atlantic and Our Young Folks sent to one address for \$5.00 per annum.

A copy of "OUR YOUNG FOLKS" for 1899, will be sent gratis to any person who will act as agent for it and form a Club. Specimen Copies, Premium Lists, Circulars, &c., sent on application.

FIELDS, OSGOOD & CO., Publishers, Successors to

The January number of the *Agriculturist* will contain, in this place, additional Illustrations of OUR YOUNG FOLKS.

THE HERALD OF HEALTH FREE.

This is a Monthly Magazine of 60 pages, devoted to the Physical, Intellectual, and Moral Improvement of the race. Its motto is,

"A Higher Type of Manhood, Physically, Intellectually, and Morally."

IT WILL TEACH the Laws which govern the physical organization of Man, and how to obey them.

IT WILL TEACH the Causes of Disease, how to avoid them, and the best and safest method of treatment, by the use of agents which do not poison the system.

IT WILL TEACH how Children should be born and reared, so that they may become perfect Men and Women. It is now publishing a series of articles on

"THE REARING OF OUR CHILDREN."

By distinguished American women.

IT WILL TEACH the Structure and Functions of every organ in the body, and the best method of keeping it in a healthy condition.

IT WILL TEACH what is the natural food for Man, and how it should be prepared.

IT WILL CONTAIN articles upon Bathing and Clothing; upon Exercise, Rest and Sleep; upon Recreation, Amusements and Social Enjoyments; upon Education, Topics of the Month, Home Treatment of Disease, Answers to Correspondents; and upon all subjects calculated to improve the condition and promote the happiness of mankind.

The *Scientific American* says: "THE HERALD OF HEALTH is a Journal which contains more sensible articles on subjects of a practical moral bearing, than are to be found in any other monthly that comes to our sanctum."

The *Home Guardian* says: "To commend the 'Herald of Health,' is a duty we owe to every one to whom we have the privilege of speaking. Truths are therein spoken for which your fainting hearts are waiting patiently to learn. Truths about eating, drinking, dressing, living, and loving, which shall, if obeyed, lift you out of weakness and languor, helplessness and pain, coldness and indifference, and make this wilderness world blossom like the rose."

The December number (which will be sent free to all subscribers for 1899,) will contain a very elaborate paper on

"WHAT TO KNOW, WHAT TO DO, AND HOW TO DO IT,"

which alone is worth a year's subscription. The very best writers are its regular contributors.

\$2.00 a year, 20 cents a number. 4 subscribers, \$7. 10 subscribers, \$15. 40 subscribers at one time, \$50.

For \$3.50 we send the HERALD and The New York Weekly Tribune one year. For \$3.50 we send it and the Agriculturist one year. For 50 subscribers and \$50, we give a Wheeler & Wilson Sewing Machine, worth \$35. We give Appleton's American Encyclopedia in 20 volumes, worth \$100, for 60 subscribers and \$120. A steel engraving of "Lincoln at Home," 18x20 inches, worth \$1.00, for each subscriber who sends 30 cents extra. The Herald of Health and the Atlantic Monthly, price \$1.00, for \$7.00. Harper's Magazine same as Atlantic Monthly. Those who subscribe now will get Oct., Nov., and Dec. Nos. of this year free. Address

MILLER, WOOD & CO.,

15 Lighthouse Street, New York.

NATURE AND OUT-DOOR LIFE

Will be the subject of articles by the AUTHOR of "THE SEVEN LITTLE SISTERS," (now in course of publication,) to which others will be added by Mr. CHARLES J. FOSTER, and by Mr. W. F. G. SHANKS, who has already prepared papers upon the FIRE-DAMP, WRECKERS and WRECKING, &c.

DECLAMATIONS

Of an entirely fresh character will be furnished by Rev. ELIJAH KELLOGG, author of "Sartorius" and "Iellius." The first of these, "Hannibal at the Altar," will appear early in the year.

ACTING CHARADES.

Each number of the new volume will contain an *Acting Charade*, prepared expressly for young people by S. ANSTY FROST, the best American writer of such pieces.

Mrs. STOWE, Mrs. DIAZ, Miss MYCROFT, Mrs. WHITNEY, Miss COLLETT, Mrs. ASTIN, Mrs. WELLS, Mrs. THAXTER, Miss PHILIPS, Mrs. WEEKS, Miss PRESCOTT, "SOUTHERN MAY," and others will continue their pleasant contributions, and their names are an assurance that articles for the special benefit of girls will not be wanting in the magazine.

ILLUSTRATIONS.

The Illustrations will remain under the charge of Mr. ANSTY, and no pains or expense will be spared to supply the best which can possibly be obtained. Special prominence will hereafter be given to FULL-PAGE PICTURES.

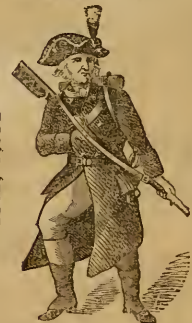
EVENING LAMP AND LETTER BOX.

These departments will be enlarged and improved. The Editors will endeavor through these Departments to give encouragement and advice to their young friends, and they cordially invite communications from all their readers.

CONTINENTAL

LIFE INSURANCE CO. OF NEW YORK.

POLICIES ISSUED TO SEPT. 1, 1898, 9,954



INCOME OVER \$2,000,000.00

JUSTUS LAWRENCE, - - - PRESIDENT.
J. HILTON SCRIBNER, - - VICE-PRESIDENT.
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E. D. WHEELER, M. D., MEDICAL EXAMINER.

PRINCE & COS.
ORGANS
AND MELODEONS.
49,000, now music:
BUFFALO, N.Y. CHICAGO, ILL.

NO WIND, DUST, SNOW, OR RAIN

Can penetrate where TORREY'S PATENT WEATHER STRIPS are used. Send for Illustrated Circular showing our new improvements. E. S. & J. TORREY & CO., 12 Madison Lane, N. Y.

Advertisements to be sure of insertion, must be received BEFORE the 5th of the preceding month.

TERMS—(cash before insertion):

IN ENGLISH EDITION.

Ordinary Pages, \$1.50 per line. Less than 4 lines, \$5.
Open Pages (open without cutting) \$2 per line.
Page next to Reading Matter and Last Page, \$2.50 per
square line of space for each insertion.

IN GERMAN EDITION.

(The only German Agricultural Journal in the United States.)

Ordinary Pages, 25 cents per line. Less than four lines, \$1.00 for each insertion.
Business Notices and Last Page, 40 cents per line for each insertion.

A Few Good Advertisements

Will be received in the Agricultural and Horticultural Annals for 1890, shortly to be issued from this office. The wide circulation of these works, and their high character, make the limited number of advertising pages very desirable. The books are kept as part of the library by the purchasers so that the advertisements have a permanent value. Copy must be sent before December 20th.

Terms, \$10 per page in each Annual.
ORANGE JUDD & CO.,
215 Broadway, New York.



Bliss Gardeners' Almanac for 1869

Contains 68 pages of closely printed matter, embracing a *Monthly Calendar of Operations*, and a *price list* of the leading varieties of *Garden, Field and Flower Seeds*, with brief directions for their cultivation. A copy will be mailed to all applicants enclosing a three cent stamp.
Address **B. K. BLISS & SON**, Box 5712 P. O.,
41 Park Row, and 131 Nassau-st., New York.

Early Rose Potato.

Among the many households of our patrons to whom we furnished this valuable Potato last spring, we have yet to hear from the first one who is not fully satisfied with his purchase. The only regret expressed is that they had not procured more. We are daily in receipt of the most flattering testimonials not only of its earliness and good quality, but of its astonishing productiveness, some of which seem almost fabulous. One reports of having grown a *bushel from a single pound*; a yield of one *hundred fold* is an everyday occurrence. The following well-known gentlemen have given it their unqualified approval, and endorse it as the best, most productive, and earliest variety in cultivation: Hon. Marshall, Wm. C. Chase, Esq., Dr. J. G. Holliday, (Timothy Titcomb), and many other prominent agriculturists, horticulturists, and market gardeners. We shall continue to execute *cash orders* through the month of December at the following prices:

One pound, \$1.00; Three pounds, \$2.00, by mail, postpaid, one peck, \$3.00; Half bushel, \$8.00, by express, to be paid by purchaser. One barrel, \$15.00; One barrel, \$40.00, by Express, to be paid by purchaser.

Sixty pounds to the bushel, 165 pounds to the barrel. Prices to the trade, in larger quantities, will be given upon application.

Should the weather be too cool when the order is received the potatoes will not be sent until they can be shipped with safety. All orders must be accompanied with the cash.
B. K. BLISS & SON,
No. 41 Park Row, and 131 Nassau-st., New York.
P. O. Box 5712.

Norway Oats, and Early Rose.

Both warranted genuine and from original Vermont stock, by mail, postpaid. *Norway Oats*, 5 lb. 60 cts., 1 lb. 10 cts. quart; One lb. Oats and 1 lb. Early Rose, \$1.50. *Early Rose Potatoes*, 1 lb. \$1.00, 2 lbs. \$1.50, 3 lbs. \$2.00. We also offer the following premiums for those purchasing us as all orders received before the first of January next. For the largest number of pounds of "Early Rose," received from one dollar package, \$10; 24 largest, \$8. Also, 40 Premiums of \$1.50 each on 2 lb. packages, 1st Premium, \$10; 2d do, \$5.00; and 2d do of \$1.50 each. On 3 lb. packages, same premiums, see our advertisement last month. Express and stamps for circular, and address **WATKINS & CO.,**
West Dresden, Yates Co., N. Y.

Seed Potatoes for Sale.

Early Rose, Sebce and Goodrich Seedlings.

By Pound, Bushel, or Barrel. Circular sent free. Address **RICHARD YOUNG**, Morton P. O., Springfield, Del. Co., Pa.

Seed Potatoes,--From Original Stock.
1,000 Barrels Harrison at \$1 per barrel.
500 " " Early Goodrich at \$1 per barrel.
" " Early Rose at 50 cents per pound.

Please cut this out and preserve it until you are ready to give order.

T. BUCHANAN, JR., Utica, N. Y.

BUY YOUR GENUINE

**EARLY
ROSE
POTATOES**

From GEO. A. DEITZ,
CHAMBERSBURG, PA.

1 Pound, \$1.00, by mail, postpaid.
2 Pounds, \$1.50, " "
4 " \$3.00 " "
1 Peck, \$6.00, at Chambersburg.

Surprise Oats.

1 Pound, 35 cents, by mail, postpaid.
2 " 60 " "
4 " \$1.00 " "
1 Peck, \$1.50, at Chambersburg.
1 Bushel, \$5.00.

New Brunswick Oats.

1 Pound, 50 cents, by mail, postpaid
2 Pounds, 50 cents, " "
4 Pounds, 80 " "
1 Peck, \$1.00, at Chambersburg.
1 Bushel, \$5.50.

Black Norway Oats.

1 Pound, 50 cents, by mail, postpaid.
2 " 60 " "
4 " 80 " "

California Spring Barley.

1 Pound, 35 cents, by mail, postpaid.
2 " 60 " "
4 " \$1.00 " "
1 Peck, \$1.50, at Chambersburg, Pa.
1 Bushel, \$5.00.

Six Rowed Spring Barley.

1 Pound, 35 cents, by mail, postpaid.
2 " 60 " "
4 " \$1.00 " "
1 Peck, \$1.50, at Chambersburg.
1 Bushel, \$5.00.

Hybrid Yellow Dent Corn.

1 Pound, 35 cents, by mail, postpaid.
2 " 60 " "
4 " \$1.00 " "
1 Peck, \$1.50, at Chambersburg.
1 Bushel, \$5.00.

Yellow Gourd Seed.

1 Pound, 25 cents, by mail, postpaid.
2 " 50 " "
4 " \$1.00 " "
1 Peck, \$1.50, at Chambersburg.
1 Bushel, \$5.00.

Sweet Corn, Three Best Varieties.

1 Pound, 40 cents, by mail, postpaid.
2 " 60 " "
4 " \$1.00 " "

Clover Seed, Alsike.

1 Pound, 80 cents, by mail, postpaid.
2 " \$1.50 " "
4 " \$3.00 " "

Tall or Mammoth Clover.

1 Pound, 60 cents, by mail, postpaid.
2 " \$1.00 " "
4 " \$1.00 " "

Red Clover Seed.

1 Pound, 35 cents, by mail, postpaid.
2 " 60 " "
4 " \$1.25 " "

Harrison and Early Goodrich Potatoes.

1 Pound, 35 cents, by mail, postpaid.
2 " 60 " "
4 " \$1.00 " "
1 Peck, \$1.50, at Chambersburg.
1 Bushel, \$5.00.

White Swedish Oats.

1 Pound, 35 cents, by mail, postpaid.
2 " 60 " "
4 " \$1.00 " "
1 Peck, \$1.50, at Chambersburg.

Sent to **GEO. A. DEITZ, Chambersburg.**

Spring Seed Wheat, Red Chaff.

4 Pounds, \$1.00, by mail, postpaid.
1 Peck, \$2.00, at Chambersburg.
1 Bushel, \$7.00.

White Chaff Spring Wheat, Smooth.

4 Pounds, \$1.00, by mail, postpaid.
1 Peck, \$2.00, at Chambersburg.
1 Bushel, \$7.00.

Mammoth Bearded Wheat, Spring.

4 Pounds, \$1.00, by mail, postpaid.
1 Bushel, \$7.00.

CHESTER WHITE HOGS.

\$8 per pair, not akin, at Chambersburg.

BRAHMA FOWLS.

\$7 per trio, at Chambersburg.

The money to come with all orders, and will be promptly
shipped by **GEO. A. DEITZ, Chambersburg, Pa.**

IMPORTANT TO GARDENERS!

BUY THE BEST.

Fresh and Genuine Wethersfield Garden Seeds, New Crop, 1868.

Grown from choice stocks expressly for the Market Gardener's Trade. Orders will receive careful attention. Our new Fall Catalogue sent free to all applicants.

H. D. HAWLEY,
Seed Grower and Dealer, 492 and 498 Main-st.,
Hartford, near Wethersfield, Conn.
Established 1852.

PEAR SEED.

PEAR SEED.

New Crop of the present season now ready for mailing at \$1 per B. Price in quantities to Nurserymen and Dealers on application.

APPLE SEED, 50 cents per quart; \$12 per bushel.
MAHALE PITS, 60 cents per pound.

J. M. THORBURN & CO.,

15 John-st., New York.

CATALOGUES SENT FREE.

M. O'KEEFE, SON & CO.,

Importers and Growers, Wholesale and Retail Dealers in Flower and Vegetable Seeds, Dutch Bulbs, Fruit Plants, Ornamental Shrubs, Roses, &c.

Ellwanger & Barry's Block. Rochester, N. Y.

WILSON EARLY BLACKBERRY.

75,000 PLANTS, grown in nursery rows in open field like potatoes, grown easy and sold cheaper than by any other producer. Also 50,000 Kittenberry, and a large stock of the best varieties of the Strawberry and Raspberry. All genuine, good rooted plants (no suckers), for prices too low to name here. Those who apply to others first and myself last before they purchase, will fare the best. Pins and root cuttings in great quantities at about the cost of production. Correspond or come in person.

SILAS WALTON, Moorestown, N. J.

Pear Seeds and all other Fruit, Flower, Tree and Garden Seeds, by the paper, oz., lb., cwt., or bushel. Seeds on Commission. Trade List ready. B. M. WATSON,
Plymouth, Mass.

Tree Planters Take Notice.

If you want Root Grafts of Apple or Pear, or young fruit trees of hardy varieties, or Pear, Apple, and Evergreen seeds, send for price list to
Manargo, McHenry Co. Ill.

1,000,000 of Choice Grape Vines

of all leading varieties, 3,000,000 of Grape Vine Cuttings, and a great supply of Currants, Gooseberry, Raspberry, and Strawberry plants, cheaper than anywhere else, for sale. Send for Price List and Catalogue.

DR. H. SCHROEDER,
Bloomington, Illinois.

WOLF CREEK NURSERY--60,000 Cherry, 60,000 E. May, 30,000 Peach, Apple and Pear, Standard and Dwarf, 50,000 Apple Stocks, extra Pear and Cherry Stocks. A variety of Trees and Plants. Our E. May Cherry is (we think) the finest in the world. Come and see, or get Catalogue free. **JOHN WAMPLER**, Troywood, Ohio.

Davison's Thornless Black Cap Raspberry.

Get your plants of the first disseminator, who propagates only from selected stock. For origin, prices, how to cultivate, etc., send for circular to **JOSEPH SEXTON**, Angola, Erie Co., N. Y. AGENTS WANTED.

Also, Strawberry, Raspberry, and Blackberry Plants.

DAVISON'S THORNLESS Raspberry Plants.--For sale by the piece, dozen, hundred or thousand. For particulars address **JOHN GAGE & SON,**
Vineland, N. J.

NORWAY OATS.

Warranted genuine, by mail, postpaid, 1 quart, \$1; one pint, 60 cts. One quart (or 1 lb.) Norway Oats and 1 lb. Early Rose Potato, \$1.80. See advertisements last month. Address **WATKINS & CO.,** West Dresden, Yates Co., N. Y.

WILL EXCHANGE for Nursery stock, or sell for cash. Root CUTTINGS of Kittany, Wilson's and Missouri Mammoth. Price lower than any yet offered.

RINSEY & GAINES, Dayton, Ohio.

ONE HUNDRED ACRES ENOUGH, of Raspberries and Blackberries, the fruit of which brought \$1 per quart in market. Send stamp for Catalogue.

WM. PARRY, Cinnamon, N. J.

50,000 FIRST-CLASS AND EXTRA FIRST-CLASS Pear Seedlings for sale by
S. H. SILL, Geneva, Ontario Co., N. Y.

1 lb. Genuine Early Rose Potato, 60 cents. 1 pint Norway Oats, 60 cents. Jones & Clark, 30 cts. free by mail. Bots for \$2.00. **D. B. HIGGINS**, Wilmington, Delaware.

The best article in use. Break 2 to 3,000 pounds flax straw in 10 hours—removing 65 to 75 per cent of woody matter. Will do the work better and save 120 lbs. to the ton more than any other machine. Will break tangled and straight straw. A man and a boy, and one to two horse-power works them. Occupies about 5 feet square. Send for Circular.

JOHN W. QUINCY, 93 William-st., New York.

THE CINCINNATI WEEKLY TIMES

HAS ENTERED UPON ITS TWENTY-SIXTH YEAR,

Considerably Enlarged and Improved.

This popular Journal has for many years retained the reputation of being one of the Best Family Journals Published in the United States, and as having the largest circulation of any Weekly in the West. It finds its admirers among all Parties, its Patrons in all Sections. It contains but a limited number of advertisements, and is filled with an immense amount of entertaining, instructive, and amusing reading matter. will be greatly superior. In addition to its being BEAUTIFULLY ILLUSTRATED, we propose to make several additions to it, which will render it still more complete and valuable. It will contain over One Hundred articles on different subjects; the Statistical Tables have been prepared with the greatest care, and the different departments will prove to be of great interest to the Farmer, the Merchant, and the Mechanic.

Out of ten thousand testimonials from its patrons in favor of the Weekly Times, we have room for only a few.

Postmasters Encourage It.

"I like your paper so well I want to see it in every family. I am and have been a subscriber from '41, and I will and must say it. The Weekly Times is the best Family Journal that comes to this office."—DANIEL FRALICK, P. M., Broken Swirl, O.

"I have tried the Weekly Times and find it suits my family very well. Sound in morals, and in politics, and in everything for a family. I love the Times."—THOS. LAMB, P. M., Port Perry, Pa.

Democrats Speak Well of It.

"I am a Democrat myself, but still I like your paper as a family paper. My wife says she would sooner read your paper than any other printed in Cincinnati."—E. D. CULBERTSON, Logan, O.

"I never did like your politics, but as a family journal I think it is the best paper for the money, to be found in America."—C. W. GREGORY, Fayetteville, Texas.

Republicans Admire It.

"I sent you a club last winter, and think I can do still better this year, as the Weekly Times admits all classes, especially the Union-loving people."—D. LITCHFIELD, Bushnell, Ill.

"I consider the Weekly Times the best family paper I ever had the honor of taking. Its high moral tone and its truly Union sentiments endear it to the hearts of all liberty-loving men and women, everywhere."—Wm. A. CARRIS, New Carlisle, Ind.

The Ladies Will Have It.

"The ladies are all constant readers of the Weekly Times in this neighborhood. In fact, all of both sexes, old as well as young, pronounce it to be the best family journal known."—J. B. CUMMINGS, Xenia, O.

The American Entomologist.



EDITED BY BENJ. D. WALSH, State Entomologist of Illinois AND CHAS. V. RILEY, and Missouri. Of practical value to

Farmers, Gardeners and Fruit-Growers,

And of interest to the Scientific Man.

Profusely Illustrated.

Gives descriptions and figures of new species, and the history and habits of noxious and beneficial insects. Third number issued Nov. 1st. Published monthly at \$1.00 a year. An extra copy sent free to any one sending us five names with the money. Sample copies sent on application. Published by

R. P. STUDLEY & CO., St. Louis.

THE COMSTOCK & GLIDDEN SPADER. Awarded a Silver Medal at the Paris Exposition. Greatly improved and reduced to nearly half its original weight and price. We are prepared to fill orders for spring work. Farmers, send for Circular. EDWARD P. ALLIS & CO., Milwaukee, Wisconsin.



A Present to every Subscriber.

The Union Hand Book and Family Diary for 1869.

This new feature, recently introduced, and which gave such universal satisfaction to our Sixty-five Thousand subscribers last year, will be continued this year.

As complete and interesting as our patrons pronounced the Hand Book for 1868 to be, the one for 1869

"Next to providing for my family food and raiment is a good newspaper; and there is none within my knowledge that deserves that name more than the good old Weekly Times."—A. REMSER, Ida, O.

To conclude, it is the universally conceded opinion of its SIXTY-FIVE THOUSAND PATRONS, that

Every Family Should Have It,

Every Merchant Should Have It,

Every Farmer Should Have It,

Every Mechanic Should Have It,

Every Woman Should Have It,

Everybody Should Have It.

Our fine colored engraving of the "GIANT TREES OF CALIFORNIA" will be sent to those who prefer it to the Hand Book.

TERMS: Single Subscriptions, \$1.00 per year. Clubs of Ten, 1.30 each. An extra copy to the getter up of the Club.

C. W. STARBUCK & CO.,

No. 63 West Third Street, Cincinnati, Ohio.

Those desiring to get up Clubs will please send for Circulars and Club Lists.

Persons remitting their subscriptions will also send six cents to pay postage on the premium.

REPAIR YOUR ROOFS WITH

Asbestos Cement
PRESERVE YOUR ROOFS
WITH

Asbestos Roof Coating

These materials are prepared ready for use, and can be easily applied by any one.

H. W. JOHNS,

SOLE MANUFACTURER,
78 William Street, New York.

C. O. D.-READER, if you want to buy a WALTHAM WATCH, in solid Gold and Silver cases only, procure circular (sent free) of M. P. CHAPMAN & CO. No. 47 Liberty-st., New York. They sell the genuine cheaper than any other dealers.

THE

NEW-YORK TRIBUNE.

The total circulation of THE TRIBUNE is now 391,000 copies, and is divided as follows:

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Alabama..... 231	Montana..... 187
Arizona..... 42	Nebraska..... 1,009
Arkansas..... 212	Nevada..... 631
California..... 1,689	New-Hampshire..... 4,271
Colorado..... 567	New-Jersey..... 9,694
Connecticut..... 10,309	New-Mexico..... 45
Dakota..... 69	New-York..... 120,978
Delaware..... 516	North Carolina..... 302
District of Columbia..... 112	Ohio..... 35,739
Florida..... 189	Oregon..... 270
Georgia..... 339	Pennsylvania..... 22,975
Idaho..... 133	Rhode Island..... 1,586
Illinois..... 6,589	South Carolina..... 457
Indiana..... 6,313	Tennessee..... 1,462
Iowa..... 6,918	Texas..... 832
Kansas..... 2,697	Utah..... 199
Kentucky..... 1,429	Vermont..... 189
Louisiana..... 291	Virginia..... 1,144
Maine..... 5,112	West Virginia..... 1,540
Maryland..... 131	Washington Territory..... 68
Massachusetts..... 8,813	Wisconsin..... 4,092
Michigan..... 6,625	Canada..... 983
Minnesota..... 2,284	Foreign..... 686
Mississippi..... 320	
Missouri..... 2,648	Total circulation..... 391,000

Advertisers are referred to the above table of circulation.

The Full Reports of the American Institute Farmers' Club, and the various Agricultural Reports, in each number, are richly worth a year's subscription.

Ever since its commencement, THE WEEKLY TRIBUNE has been an authority upon the farm. We make features of the Farmers' Club, and permit no question of interest to the agriculturist to pass without comment and advice. When it is remembered that this advice is given by one of the most conscientious farmers in the country, the reader may estimate its value. It has been well observed that a careful reading and study of the Farmers' Club Reports in THE WEEKLY TRIBUNE alone will save a farmer hundreds of dollars in his crop. We shall soon commence a series of articles on Agriculture by well known practical Farmers, which will add materially to the value of THE TRIBUNE to those interested in farming. As it is, no prudent farmer can do without it. As a lesson to his workmen alone, every farmer should place THE WEEKLY TRIBUNE upon his table every Saturday evening.

The enormous circulation of THE WEEKLY TRIBUNE enables us to afford it at a small profit on each copy.

TERMS OF THE TRIBUNE.

DAILY TRIBUNE, Mail Subscribers, \$10 per annum.
SEMI-WEEKLY TRIBUNE, Mail Subscribers, \$4 per annum.
Five copies or over, \$3 each; 16 copies, \$45.
WEEKLY TRIBUNE, Mail Subscribers, \$500 per annum.
5 copies, \$9; 11 copies, \$15; 21 copies, to one address, \$25; 21 copies, to names of subscribers, \$37; 51 copies to one address, \$50; 51 copies, to names of subscribers, \$35.

Advertising Rates.

DAILY TRIBUNE, 25c., 30c., 40c., 60c., and \$1 per line.
SEMI-WEEKLY TRIBUNE, 25 and 50 cents per line.
WEEKLY TRIBUNE, \$3, \$3, and \$3 per line.

According to position in the paper.

Also, Published and for sale at the TRIBUNE Office.

EARTH CLOSETS;

HOW TO MAKE THEM,

AND

HOW TO USE THEM.

By GEO. E. WARING, JR.,

Author of "The Elements of Agriculture," "Draining for Profit and Draining for Health," formerly Agricultural Engineer of the Central Park. Illustrated with many Wood Engravings. Price 25 cents.

Will be ready about January 1st,
THE TRIBUNE ALMANAC FOR 1869,
with full and accurate returns of the Elections. Price 20 cts., 7 for \$1.00.

Terms, cash in advance. Address

THE TRIBUNE,
NEW YORK.

Winter Evening Amusement and Instruction.

The Most Popular Reading of the Day.

Frank Leslie's Illustrated Newspaper.

The aim of this paper is to furnish a pictorial history of current events. Between thirty and forty illustrations appear in every weekly number, including eight engravings of the pictorial staff of the foreign press, events of national or local interest, railroad or steamboat accidents, amusing and thrilling incidents, comics, &c. The literary matter comprises, besides well-written editorials on the leading questions of the day, and descriptions of the engravings, a serial story of thrilling interest, entertaining narratives and tales, humorous anecdotes, choice poems, &c.

Subscription price, \$1 per year—five copies, \$20.

Frank Leslie's Chimney Corner.

A purely literary pictorial. Exceeding events of the day, its aim, as its title indicates, is to furnish amusement for the leisure hour. Its contents consist principally of original stories by able writers—including a serial, accounts of remarkable adventures, biographical sketches of self-made men—with portraits, descriptions of manners and customs in remote countries, short poems, fairy stories, enigmas, conundrums, charades, &c. Illustrated with large and serial engravings, of which there are from fifteen to twenty in each weekly number.

Subscription price, \$1 per year; five copies, \$20.

Frank Leslie's Lady's Magazine.

The leading fashion periodical in America. Each monthly number contains a large colored plate of the latest fashions, from designs sent from Paris as soon as invented, which are thus published simultaneously in New York and Paris; also a four-page uncolored fashion plate, exhibiting the various leading styles. These are accompanied with full descriptions and explanations, with numerous other illustrations. Every number contains an original letter from Paris, describing the very latest modes, by a lady whose position gives her access to fashionable society. The literary portion of this Magazine comprises a continued story, numerous interesting tales, poetry, anecdotes, &c. The whole profusely illustrated with fine engravings.

Subscription price, \$3.50 per year.

Frank Leslie's Illustracion Americana.

An illustrated paper in the Spanish language, with all the attractive features, pictorial and literary, that have made Frank Leslie's other publications so popular.

Subscription price in the United States, \$12 currency

Frank Leslie's Boys' and Girls' Weekly.

One of the cheapest pictorial papers ever published. Intended for the amusement of youth of both sexes. The illustrations and literary matter are such as especially recommend themselves to the young. It contains, besides a continued story and well-written tales, accounts of wonderful adventures, descriptions and illustrations of foreign manners and customs, anecdotes and pictures of animals, familiar and funny fables, &c. From twenty to twenty-five engravings appear in each weekly issue.

Subscription price, \$3.50 per year.

Frank Leslie's Illustrierte Zeitung.

A pictorial newspaper in the German language, containing a large number of engravings illustrating events of the day, exciting and amusing incidents, adventures, and manners and customs in all parts of the world, with a large amount of literary matter, including numerous interesting tales. This paper combines for the German reader the attractions presented in the Illustrated Newspaper and the Chimney Corner.

Subscription price, \$4 per year.

Frank Leslie's Budget of Fun.

This is a comic pictorial newspaper, published on the first of every month. Its remarkable success, and the steady increase in its circulation, attest its adaptation to the popular taste. It looks at things of the day from a comic point of view, and its illustrations—of which there are from forty to fifty in every issue—are directed, without respect to station or person—against the follies and vices of the times. It constitutes an almost inexhaustible source of amusement and fun.

Subscription price, \$1.50 per year.

Frank Leslie's Pleasant Hours.

The cheapest periodical in the United States, containing eighty large octavo pages of letter press, with from twenty to twenty-five illustrations, besides two full-page engravings on tinted paper, in each number. A continued story, and well-written tales and stories of adventure, with humorous anecdotes, descriptions of manners and customs, amusements for young people, &c., constitute the reading matter.

Terms of subscription, \$1.50 per year.

Subscriptions should be sent to

FRANK LESLIE,
337 Pearl Street, New York City.

Now is the Time to Subscribe.

"Unquestionably the best sustained work of the kind in the world."

Harper's Magazine.

The most popular Monthly in the world.—*New York Observer.*
It is one of the wonders of journalism—the editorial management of HARPER'S.—*Nation.*

It meets precisely the popular taste, furnishing a pleasing and instructive variety of reading for all.—*Zion's Herald, Boston.*

"A complete Pictorial History of the Times."

Harper's Weekly.

AN ILLUSTRATED NEWSPAPER.

The model newspaper of our country—complete in all the departments of an American family paper—HARPER'S WEEKLY has earned for itself a right to its title, "A Journal of Civilization."—*N. Y. Evening Post.*

This paper furnishes the best illustrations. Our future historians will enrich themselves out of HARPER'S WEEKLY for their writers and editors and publishers are turned to dust.—*New York Ecologist.*

The articles upon public questions which appear in HARPER'S WEEKLY from week to week form a remarkable series of brief political essays. They are distinguished by clear and pointed statements, by good common-sense, by independence and breadth of view. They are the expression of mature conviction, high principle and strong feeling, and take their place among the best newspaper writing of the time.—*North American Review.*

An Illustrated Weekly Journal of Fashion, Pleasure, and Instruction.

Harper's Bazar.

A Supplement, containing numerous full-sized Patterns of useful articles, accompanies the paper every fortnight, and occasionally an elegant Colored Fashion Plate.

HARPER'S BAZAR contains, besides pictures, patterns, etc., a variety of matter of special use and interest to the family: articles on health, dress, and housekeeping in all its branches; its editorial matter is specially adapted to the circle it is intended to interest and instruct; and it has, besides, good stories and literary matter of merit.—*New York Evening Post.*

It has the merit of being sensible, of conveying instruction, of giving excellent political and social comment, and of being well stocked with good reading matter.—*Watchman and Reflector.*

To dress according to HARPER'S BAZAR will be the aim and ambition of the women of America.—*Boston Transcript.*

TERMS FOR HARPER'S PERIODICALS.

HARPER'S MAGAZINE, One Year.....	\$1.00
HARPER'S WEEKLY, One Year.....	4.00
HARPER'S BAZAR, One Year.....	1.00
HARPER'S MAGAZINE, HARPER'S WEEKLY, and HARPER'S BAZAR, to one address, for one year, \$10.00; or any two for \$7.00.	

Address HARPER & BROTHERS, New York.

NOW READY.

The New Music Book, THE TONART.

F. J. HUNTINGTON & CO.,

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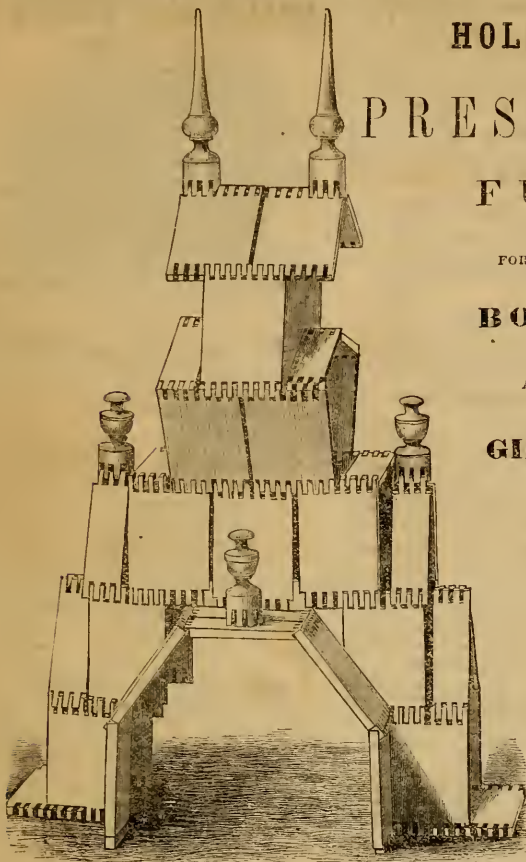
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